


HOME COMPUTING WEEKLY

AN ARGUS SPECIALIST PUBLICATION

April 16-22 1985 No 108 45p

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BLAGGER GOES TO HOLLYWOOD

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Amstrad special



Sound, adventure and graphics on your CPC464

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MTX 512 - Now runs Spectrum software

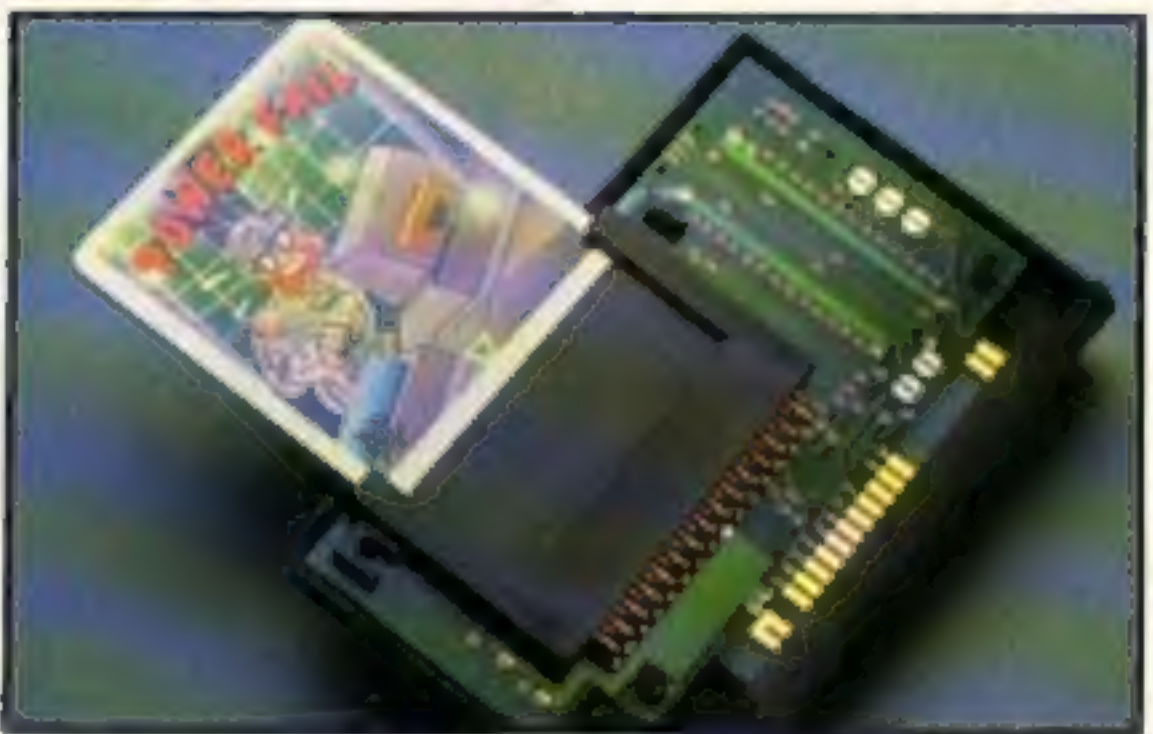
Now software's on the cards!

Software on a card is now available from the Japanese company Astar International. Shown for the first time at the Comdex Japan exhibition, the credit card-sized plastic boards can hold a complete program and load it instantly into your computer.

The card slots into a cartridge-type case and is currently available for MSX machines; versions for C64 and Spectrum are scheduled.

One unique feature is the card's ability to contain a whole range of options within the format. The first cards all contain ROM-based games, EPROM-type cards, which can be programmed and then erased, and battery-backed RAM cards are also in the pipeline.

Initially, the cards have been used to market games. All of April's production - some



Astar's MSX card and cartridge 300,000 cards - has been bought by a printer manufacturer who will be supplying typefaces on the cards in order to give a very quick change.

The cards resist almost all damage. They don't bend

easily, they aren't damaged by static and they are not water-sensitive either. The only thing which may restrict usage is the price.

The adaptor is very cheap ... about £5 - but the cards will probably be nearer £20 in their current form. A number of British software houses have already shown interest: Acornsoft and Ocean have seen the unit and are assessing its viability. GST is to produce an adaptor for the Sinclair QL and the Commodore version is due within three weeks.

One advantage for software houses is the difficulty of copying software from the card. A number of spare data lines can be programmed to make the software uncopyable.

There is no doubt that the cards work. We have seen them being used on an MSX machine and they load in under five seconds. What remains to be seen is if the price can be made attractive enough for the big software houses to accept Astar cards as a new standard for software distribution.

Spectrum games on Memotech

Memotech is producing an adaptor for the MTX 512 computer which will enable it to run commercial Spectrum software.

Aimed at the home and education markets, the unit comprises both a hardware add-on and a software tape, which must be loaded before you can run Spectrum programs.

The unit emulates the Spectrum ROM and is very flexible. Each tape will have the conversion code required by 20 games and a number of dif-

ferent tapes are being developed.

"We have been trying very hard to get software houses to produce Memotech software but they haven't taken the gamble", commented Tim Spencer, Memotech UK sales manager. "We have lost sales by not having the software and this project should help us to remedy that situation."

The hardware will probably cost about £30, with each tape costing £5.

Inside your bolder, brighter, better HCW...

Seiko RC-1000 Time for a change

Formula for success? Joysticks reviewed

Here's Woody See page 3



Star profile Craig Thomas author of Firefox

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 Ad Manager Dominic Forlizzi
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Soapbox

It is always nice to read letters from readers.

We get the chance to make the magazine better by including all the ideas and suggestions that these letters contain. We like to hear of your successes and difficulties with programs and games.

There is one kind of letter we can do without, however — no, not those from the taxman! letters praising one computer at the expense of another.

We have had a number of these recently but we won't be printing any more. We try to cover a huge range of computer types. All have their good and bad features and people buy the one that best suits their needs at the time.

So please let's not have any more letters of that type. We need your high scores, ideas, pleas for help and even criticism. We will send a prize to all those whose letters are printed, so why not write today.

Dave

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Coming Soon...

- Review of the Tatung Einstein — now £350
- Printer reviews for the BBC
- Edward firmware review gets the last word

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BASIC LIVING

by Jon Wedge and Jim Barker



NEWS

Bright sparks

Our Give my Regards to Broad Street Competition caused confusion among the entrants. A good number seemed to think that Broad Street is in New York.

- Here are the answers:
1. Rupert Bear was in a recent McCartney video.
 2. Linda is the name of Paul's wife.
 3. Broad Street is in London.
 4. The Beatles were John, Paul, George and Ringo.
 5. Paul was born in Liverpool.
 6. Tracy Ullman starred in the film.

The winners of the album, sweatshirt and game are: Lee Cutts, Sheffield; A Gupta, Bexley; J F Edmeades, Toothill; Terry Currell, Thornton Heath; Peter Roche, Grimsby; Paul Gunson, Mirfield.

Runners-up each win a copy of the game: Lisa Mathlin, Newport; Jackie Hayden, Brentwood; Morris Corbett, Dingwall; Alan Strawbridge, Weymouth; Leigh Nottingham, Hartlepool; Jamie Martin, Birmingham; Paul Sumner, Long Easton; Stephen Lawlor, Tadworth; Kevin Smith, Bristol; Lisa Haddock, Urmston; Alfred Harris, Runcorn; A G Klimczak, Edinburgh; Mary Syddall, Braintree; Gary Mitchell, Norwich; Gary Wilson, Gateshead; Paul Corr, Belfast; M J Phillips, High Wycombe; Jeffrey Williams, Flint; M Brumler, Houghton; P C Rutherford, Hexham; G S Williams, Barnsley; Alan McWilliams, Castlemilk; Julie Peacock, Stockton-on-Tees; Martin Simmons, Maldon; Jonathan Leach, Tipton-St-John; S Collinge, Rochdale; David Jewkes, Coventry; Andrew Willet, Newcastle-upon-Tyne; G Stevenson, Tyersal; Jacqui Joiner, Waterlooville; Simon Eland, Hartlepool; A J Brooks, Weymouth; Paula Keys, Romford; Chris Garbutt, Basildon; Julie Lowe, Wood Green; Derek Wells, Crawley; Keith Haggerty, Blyth; Anthony Kauczok, Hengoed; L Kennedy, Inch; Jon Gilbert, Rotherham; Neil Redden, Aycliffe; Stephen Parkinson, Gresford; Andrew Smith, Haverigg; Tania Faulkner, Bromley; Andrew Tebbutt, Bartley Green; Jenny Gould, Wolverhampton; S G Young, Garrowhill; Neil Gawthorpe, Leeds; Andy Johnson, Corby; Christopher Williams, Denton.



Lakh Singh, satellite postman

Satellite link-up

Schools in Britain will soon be able to send satellite mail to the Sir Walter Raleigh

The ship is the base of Operation Raleigh, an international conservation and exploration project for young people. It has a full computer room with satellite transmission and reception gear.

The team will soon be joined by Lakh Singh, a representative of the Times Network for Schools. Through the network,

schools will be able to follow the progress of the expedition and can also question the scientists.

Lakh is a systems engineer for Telecom Gold and will work in the communications room of the Sir Walter Raleigh. He is a qualified diving instructor and will be using echo sounding equipment. It is hoped that some uncharted wrecks will be found in the Caribbean.

**Times Network, PO Box 7, 200
Grays Inn Rd, London WC1X
8EZ**

Rent-a-page

Rent-it-yourself Micronet pages are to become a reality very soon.

The new Gallery service will offer Micronet subscribers the rental of a page or sequence of pages for their own messages, ideas, pictures or anything of their choice.

The only restriction, apart from reasonable decency, is that the pages must not be used for commercial sale and this rule will be stringently enforced.

At a cost of 25p per page for six months' use, it's an affordable medium. Anyone who uses the service is given a page

number and you can rent up to 26 pages.

To update your page you need to complete a response frame. These will be collected and the modification made, usually within 24 hours.

You will be able to contact friends, share jokes and even make your software available to other users. It's like renting part of a poster. Everyone can see it but it may only be understood by a selected few.

The service is due for launch on June 1.

**Micronet, 8 Herbal Hill, London
EC1R 3AD**

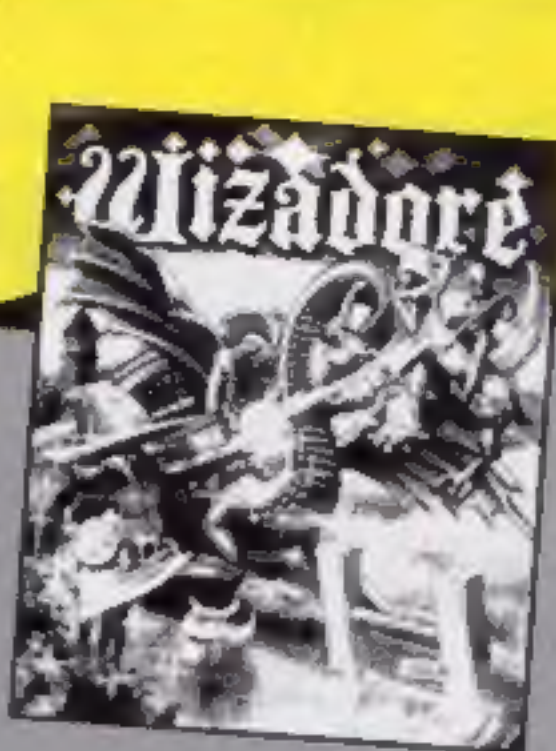
Software update

Melbourne House is billing Starion as "The ultimate arcade game for the Spectrum." And there's more along those lines: "Starion will do for arcade games what the Hobbit did for adventures," trumpets Melbourne House.

Travelling back through time, you explore 243 time states in a game of strategy and 3-D simulation.

A new name in the educational field is Jacaranda Wiley. John Wiley, the book publisher, is based in Chichester, and this move into software for schools incorporates the facilities and capabilities of the Australian branch of the company.

Designed for children in the seven- to 13-years age group, the initial range of six titles is rather pricey, at £14.95 and £19.95. Raft away River, Quick Cartage Company, Gold Dust Island, Scavenger Hunt, Cunning Running and Sheep Dog Trial are the names of the games and future plans include a word processing package and secondary schools applied maths programs.



Title	Machine	Price	Publisher
Spreadsheet	MSX	£29.95	Kuma
Starion	Spectrum	£7.95	Melbourne Hse
Super Huey	C64	£8.95	Audiogenic
Grandmaster	C16	£8.95	Audiogenic
Mystery of the Java Star	Amstrad CPC464	£7.95	Shards
Gremlins	Sp/C64/ C16/BBC/ Electron	£9.95/ £7.95	Adventure Int
Time Trucker	BBC/ Electron	£9.95	ASK
Artwork	Amstrad	£9.95	Kuma
Pac-Man	C64/Atari	£9.95	Datasoft/US Gold
Dig-Dug	C64/Atari	£9.95	Datasoft/US Gold
Mr Do	C64/Atari	£9.95	Datasoft/US Gold
BCII Grogs Revenge	C64	£9.95	US Gold
Wizadore	BBC	£7.95	Imagine
Spy Hunter	Spectrum	£7.95	US Gold
Jet-Boot Jack	Amstrad	£8.95	English
Battle for Midway	Spectrum	£9.95	PSS
Knight-Lore	BBC/ Amstrad	£9.95	Ultimate
Raft away River	BBC	£19.95	Jacaranda Wiley
Cave Fighter	VIC-20	£5.95	Bubble Bus

Einstein gold

Communications with View-data is the title of the latest product for the Einstein from Kuma.

The package allows the micro to be used to access Prestel Telecom Gold and user bulletin boards.

At £39.95 for the software, it seems expensive as you still need to buy a modem and have subscriptions for the services that you are to use.

Kuma, 12 Horseshoe Park, Pangbourne RG8 7JW

Service with a smile

If your Spectrum's on the blink and you need it repaired urgently — and you happen to live in the Glossop area — you can now take it to a while-you-wait computer repair service.

Video Vault promises instant repair, whether you drop by with your Spectrum or post it for same-day service. Video Vault has a fully computerised checking system, so faults can be located promptly — and there's a standard flat-out rate of £19.95 per computer.

Video Vault, 140 High St West, Glossop, Derbyshire

New cheetahs

Cheetah has recently launched two new joystick interfaces, a Spectrum extender cable, a range of stick-on computer feet and two aerial products.

- The joystick interfaces are compatible with most Atari style joysticks and are supplied in black cases to match the machine. Some of the joysticks provide a further edge connector and they vary in price.

- Units with an edge connector cost £12.75 others are £1.25.

- The extender cable costs £7.95 and allows peripherals to be sited away from the computer. The Hi-Stak feet angle the keyboard for easier use.

- The two way aerial switch allows two aerial inputs to the screen and simple switching between them. The extension lead at £1.50 is likely to make it even easier to use your micro at a comfortable distance.

Cheetah Marketing, 24 Roy St, London EC1R 3DJ



Cheetah joystick interface

NEWS



British talent impresses the world

Sinclair's soirée

Sinclair's push into new markets overseas continued recently when a number of educationalists visited Sir Clive's house in Cambridge. A dozen children from Thurcroft

Junior School in Rotherham entertained them. The children demonstrated the Spectrum+ and its educational software. The foreign visitors were invited by the British Council to see microcomputers in schools and the visit was so successful

that a number of the Russian delegates stayed on to have further discussions with Sinclair.

Sinclair Research, 28 Stanhope Rd, Camberley, Surrey

Come on down!

Ariolasoft launched its range of titles with a massive publicity binge at London's Hippodrome — and looks set to continue mammoth promotions, with a £10,000 budget just for prizes

until the end of the year.

There are two aspects to Ariolasoft's campaign: a monthly draw for a Commodore SX64, and a discount voucher scheme for peripherals. Anyone who buys a Ariolasoft title is eligible to enter.

Frank Brunger, marketing and sales director, looks happy enough to be giving away the latest SX64 to Paul Clift of Sharpness (left).

Ariolasoft, Asphalte Hse, Palace St, London SW1



Brunger: "Someone catch this before I drop it!"

Spitfire



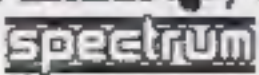
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CHOCKS AWAY!

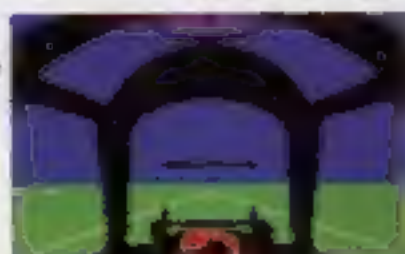
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Dave Carlos talked to author Craig Thomas about the role computers play in his latest thriller, *Bear's Tears*

STAR PROFILE

Becoming a computer expert overnight is a topic covered in Craig Thomas's thriller. Thomas is the author of *Firefox*, now released as a film starring Clint Eastwood.

If you read thrillers on a regular basis the chances are that you will have heard of Craig Thomas. He writes action novels with a spy or military theme; *Bear's Tears*, published by Michael Joseph is the first of his novels in which the computer raises its ugly keyboard.

Bear's Tears describes the fictional frame-up of a top British spymaster and the struggle of old friends to clear his name and expose the real KGB mole.

I asked Craig Thomas why, after seven novels, he should decide to include a computer theme in this one.

Craig admitted that he isn't a computer user at all. "I used a technical advisor who came up with a plot for the computer section that was plausible. The technology is only ever a hook in a novel of this kind; you have to be careful never to let it take over or it will become a lecture for the readers and I have great reserves about that."

"I don't even use a word-processor to help me write," he went on. "This is because I feel that the typewriter is just one step from the quill and the pen. I have looked at word processors and seen how they might help me to write but I have never taken the plunge. If all the processes of producing a book could be taken from floppy disc then I would buy one tomorrow but publishers still rely upon paper!"

The hero of the book is a renegade Australian spy called Hyde. He has the task of breaking into the KGB's master computer in order to get information to free his framed friend. For just one night he is taught by an MI5 computer whizz and the next day he walks into the Russian Embassy as a computer test engineer.

I asked Craig if he thought this were really possible and he admitted that it was unlikely but there is a chance that Hyde could have got the information he needed.

Big brother raises his head at this point. Whenever Hyde is using the computer someone in Moscow is watching his every move and he is contracted im-

mediately whenever he strays from the normal path. This adds a time element to the story and keeps you on the edge of your seat.

The computer is by no means central to the book but it does provide added interest. "The computer is used as a storage medium only," Craig Thomas explained. This could have been any other storage system but using a computer gave the ability to move a great deal of information easily. Proof in computer form is accepted in the end too. All Hyde has to do is offer to transmit it to London and this is accepted automatically."

This isn't quite the case however, as the end of story depends more upon the feelings of the head of British security for one of the characters than upon the proof of the computer tape. "To have doubted the computer would have added further complications," Craig admitted, "and I prefer the outcome to hinge upon the personal rather than the technical."

He continued: "I used a friend who sells computers in this case as an advisor. I wanted to do two things with this book. Firstly I didn't want to confuse non-technical readers who have never used a computer before and secondly I didn't want specialists to be able to pick

holes in the plot.

"All research should help further the illusion of the story, but it can on occasions become an end in itself and this damages the story." I think Craig walks this tightrope effectively. There is no element of the technical lecture about the book yet the computer sections are detailed enough to be credible.

"I would like to write a novel about computing and computers in a serious way but I still have to come up with an idea which involves them more fully," he said. "Most computer novels tend to be detective stories or mysteries. They don't really help the writers of an action novel. In some of these stories the characters can work out everything without going to the computer. This is a real problem in an action story."

I can't help but wonder, after reading this book, if the modern spy needs to step out of the office at all. With all the information floating around the airwaves and wandering down the telephone lines from computer to computer perhaps all we need is a room full of computer hackers breaking into the systems and taking all the information they want. It certainly wouldn't help Craig Thomas write his book, but it might make life less risky for the agents of MI5.





WIN A BBC COMPUTER

Here's part two of our Akhter Competition. There's over £1000 of hardware on offer, so hurry with your entry

Here's the second and last part of our Akhter competition. First prize is a BBC computer and colour monitor. There's also a colour monitor and a green monitor as second and third prizes, respectively. It's all worth a total of over £1000 but don't forget that you need both coupons to enter.

This week we're asking you to tell us exactly why you want to win our top prize. Just finish off the sentence on our Entry coupon (part 2) in not more than 15 words. Entries will be judged on wit and originality, so think hard before you make up your mind.

How to enter

When you have completed both parts of the competition fill in the two coupons and attach you list of words to them.

Important: Write the number of words you have made on the back of your envelope.

Post your entry to: Akhter Competition Weekly, No 1 Golden Square, London W1R 3AB. Entries close at first post on Friday 3 May, 1985.

Follow carefully the guidelines on entering. Make sure you have coupons and that you write the number of words on the back of your envelope otherwise your entry won't be valid.

The rules

Entries will not be accepted from employees of Argus Specialist Publications, Akhter Computer Group, and Alabaster Passmore & Sons. This restriction also applies to employees' families and agents of the companies.

The How to Enter section forms part of the rules.

Akhter Competition

Entry Coupon (part 2)

Number of words _____

Name _____

Address _____

_____ post code _____

Complete the following sentence using not more than 15 words:

I would like to win a BBC computer because _____

Complete clearly and fully — If you are a winner this will act as a label for your prize. Post to Akhter Competition, Home Computing Weekly, No 1 Golden Square, London W1R 3AB. Closing date: first post, Friday 3 May 1985. Don't forget to follow closely the advice in the How to enter section including writing the number of words you have made on the back of your envelope.

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SOFTWARE



Formula One

A type of Football Manager on wheels, this game is time-consuming, since you travel across the world visiting 16 Grand Prix races. Up to six players can participate, controlling a one- or two-person team competing in this simulation. You invest sponsors' money to improve your driver, cars and pit crew. The object is to win either the Drivers' or the constructors' championship — or both.

The loading screen asks you to LOAD a SAVED game, then how many players, before asking you which level of difficulty you want, and to enter your name. Then there's a choice of six teams, numerous sponsors and drivers. Then, using the sponsor's money, you can buy new engines, chassis and crew and improve the car's overall efficiency.

Before each race a screen gives a full record of the track's history and the weather forecast — so that a choice of tyre type can be made. The cars' lap times are shown and then they line up at the grid, the lights change and — they're off, with the heads of the crowd moving as cars flash around the track.

Scoreboard displays lap number, positive and car number as well as difference in time, and screen bottom shows a constant commentary on crashes, weather changes, pit-stops & during which each player must control the crew ... and so on.

The demonstration game — lasting ages — is worth seeing. An impressive, addictive game which needs that saving facility.

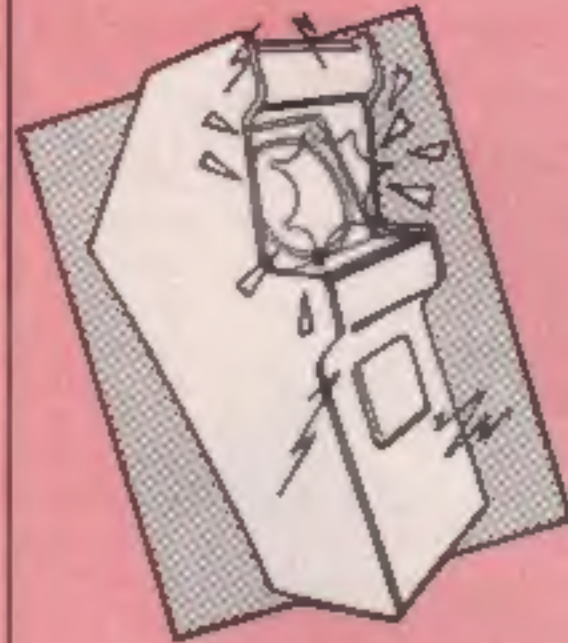
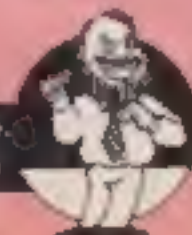
T.W.

Price: £7.95

Publisher: CRL

Address: CRL Hse, 9 Kings Yd, Carpenters Rd, London E15 2HD

SPECTRUM



BMX Stunts

As the name suggests, this game involves those immensely popular BMX cross country bicycles.

The object is to get from the start of a BMX race track, avoid certain obstacles and finish in a respectable time. If all this is achieved and your time is better than the qualifying time you move on to the next section.

Control is by joystick and speed is achieved by pressing the fire button. The faster you fire the faster the bike goes. This proves difficult to coordinate on certain joysticks.

The graphics of the game are generally good with a very life-like pedalling sprite but the rocks which get in the way are rather strange-looking, more like coloured sponges.

At first I thought that sound during the game was non-existent but if you listen carefully you can hear the bike creak as you pedal.

An annoying feature is the fact that there is only one attempt at any given distance so if you fail you have to start at the beginning of the game again. It's lucky this isn't an arcade machine!

J.D.

Price: £7.90

Publisher: Jetsoft

Address: The Workshop, 23 Church St, Eastwood, Nottingham

C64



Death Star Interceptor

Based on the space battles in Star Wars, Death Star Interceptor is a technically impressive game which falls down on playability.

The first screen, if you can call it that, simply involves launching your X-wing fighter through a portal. It's not much of a challenge, but is a bit tedious to have to go through each game, as the control of your ship is fairly erratic. Once launched you head for outer space, with the Death Star and lots of small pinpoint stars in the background.

Some of these stars then seem to move and grow larger, developing into wave after wave of attacking Tie fighters — a very impressive piece of graphics, but I found shooting at these ships very difficult as your own ship leans to the left and right whenever you move in either direction.

If you survive all that, you enter my favourite part of the game — the trench. Ducking and weaving to avoid the Death Star's defences is really gripping, even on the lowest skill level, and the moving perspective graphics are excellent, with none of the flicker that afflicts similar games.

My only real criticism is that the keyboard controls aren't very friendly. For a start, the 'Down' button (Q) is actually above the 'Up' button (A), which is a bit odd. And, like most games that don't support user-defined controls, the keys chosen assume that the player is right-handed, which I'm not, and so I found it very hard to play.

C.J.

Price: £7.95

Publisher: System 3

Address: South Bank Hse, Black Prince Rd, London SE11

SPECTRUM





The Dukes of Hazzard

The familiar theme tune starts this game, which neither lives up to the adverts nor is worth the price. Some young friends seeing the insert picture and title were eager to play it ... but were soon bored. One reason is that there's no chance of changing the level of difficulty.

The Dukes owe Boss Hogg \$5,000 and have to repay it in 72 hours, so Bo and Luke enter the Annual Hazzard Cross Country Race to win the cash. Unfortunately Boss Hog and the entire Hazzard County Police Force are out to stop them.

Starting from the Duke boys' house you have to drive the General Lee along the country road to the start of the race. Roscoe P. Coltrane is behind you in his car, aided by the Hazzard Air Wing in the shape of Jethro in the Helicopter, Jake in a veteran monoplane and Cletus in a balloon. Boss Hogg is in a station wagon and Daisy is around somewhere.

The limited graphics are very well-drawn, the sound is simple but effective and machine code ensures a smooth movement of the vehicles and scrolling. The screen bottom has score, lives and bonus. Above, are the road, grass, mountains and clouds in the sky.

You can throw dynamite at the approaching vehicles, change lanes and jump, but we were unable to avoid either Roscoe or missiles from above. Then the General Lee rolls over and is taken away by a tow truck

T.W.

Price: £6.95

Publisher: Elite Systems Ltd,

Address: 55 Bradford Street, Walsall

SPECTRUM



Hypercircuit

This program is described on the cassette inlay as home entertainment for ages seven plus, which rather suggests that it is aimed at children, and that there may perhaps be an educational element to it. There isn't — or at least, if there is it's so heavily disguised that I didn't notice it.

Hypercircuit is an arcade game which involves chasing an assortment of nasties around a printed circuit-shaped maze which is supposed to represent a microprocessor, shooting as many as possible. It's quite difficult; the maze has a lot of dead ends, and it would be a challenge to work out a route which covered all of it, without having to search out and destroy the invaders.



The game is protected by a colour code system, the pattern for which is printed on the back of the cassette inlay, rather than on a separate card, which I thought was a good idea as it's less likely to get lost that way.

There is an optional instruction sequence at the start, then you go straight into the shoot-'em-up part. If you're lucky, that is. More often than not, the program crashed before I had got that far, and I never actually succeeded in completing a game before the screen went blank.

The graphics and sound are pretty good, and I think I would probably have liked Hypercircuit if it hadn't crashed so often, but as it was I got more frustration than pleasure from it.

M.N.

Price: £7.95

Publisher: Alligata

Address: 1 Orange Street, Sheffield S1 4DW

C64



Aqua Racer

Well, it didn't take much imagination to come up with this game scenario. It's simply a Pole Position-type race against the clock using power boats instead of racing cars. Somehow I don't think this one will make the charts.

There are 20 courses to attempt but the variations are somewhat limited. I got bored before I'd explored more than a third of them. The trial runs down the courses are available in "practice mode" where you have the course to yourself. I found this the best bit of the game because in "normal mode" there are other boats dawdling along the narrow path intent on getting in your way. One touch and you sink gracefully beneath the water. Don't worry, it's not fatal, just a time penalty. You surface and plough on.

Personally, I spent too much of my time waiting for my boat to reappear. Mind you, the "demo mode" fared far worse. In fact for a demo, it was a joke. The computer "controlled" boat seemed intent on smashing into the backside of every other boat that appeared.

What can I say in its favour? The graphics are good, it fast-loads, there is a 1-4-player option . . . but at £6.99 it doesn't rate particularly good value for money. Most of the big software houses seem to be changing to releasing fewer but better games. By the look of this, Bubble Bus hasn't adopted that policy yet.

B.J.

Price: £6.99

Publisher: Bubble Bus

Address: 87 High St, Tonbridge, Kent

C64



Flipped



Hooked



Keen



Yawning



Comatose



Super Huey

One of the most fascinating types of game played on computers must be aircraft simulators — a well written simulator can give you many hours of really involved playing. Super Huey is a helicopter simulator and in my opinion is far better than many other flight simulators on the market.

There are four programs included which use the same helicopter simulator. Each has a different mission and will hold your interest for a long time.

The screen shows you a picture of what you would see from the cockpit, exactly as if you were in the pilot's seat. The on-board computer will let you enter various commands to help with your mission eg. giving maps & grids, finding co-ordinates and arming your weapons. All the computer readings are shown in adequate detail and are very realistic.

The graphics are absolutely amazing — they have to be seen to be believed. The speed and action is very fast, objects on the ground are solid and contain quite a lot of detail (as you find out if you fly near something).

There are excellent sound effects which match all the actions of the helicopter, you will even hear a mighty explosion if you should crash land and blow up.

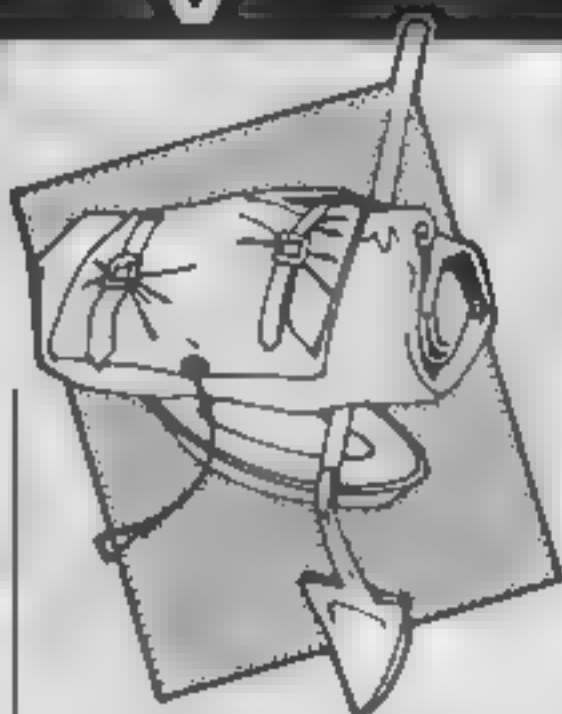
Although the price may seem high at first compared with other games, this represents extremely good value for money. It is a well written program, has a very good manual and is extremely addictive to play.

K.I.

Price: £9 95

Publisher: U.S. Gold

Address: Unit 10, Parkway Industrial Centre, Heneage St, Birmingham, B7 4LY



Castle of Jasoom

This disc game is a companion to Dungeons of Ba, from the same supplier, and stars the same character, Norman the Warrior, with a different set of chambers to explore and puzzles to solve. The resemblance between the games is very striking; there isn't much to choose between them, but I think this is marginally the better of the two.

There are supposed to be 36 different screens for Norman to explore in his quest to find the Jasoomian diamond, but I only managed to reach about a third of those before running out of strength. Each screen has a number of hidden rooms for you to discover by carefully probing the walls. The objects to be picked up are not visible until you walk over them, so it is important to explore each room thoroughly when you first play, but as their locations do not change, if you draw a map — not an easy task, as the layout is quite complicated — you can skip the boring bits in subsequent games.

The giants, spiders and assorted other baddies are the biggest problem. You have to use the function keys to switch between shield, arrow, fight and take modes, and if you tangle with a monster in the wrong mode — all too easy to do — your strength evaporates with alarming speed. Ducking off the edge of a screen and back again is a good technique for getting rid of troublesome monsters.

If you enjoy graphic adventures, and you have a disc drive, this is a good buy.

M.N.

Price: £12.95 disc

Publisher: Quicksilva

Address: Palmerston Park Hse, 13 Palmerston Rd, Southampton SO1 1LL



Pinball Wizard

This simulation of a pinball machine embraces many of the traditional features found on the real thing.

Strangely the game area has been squared up, no doubt to fit the shape of the screen. More realism could have been provided by running the game horizontally.

Consequently the ball can take very few routes and the whole game seems to run slower than the pinball machines I have used. Even in the fastest of five speeds it still seems a bit too easy.

However the graphic representation, allied to the remarkably smooth movement of the ball, makes the game very playable and the bonus feature presents quite a challenge.

If you are at all fastidious about wanting real value for money then pass this one by. At almost 50 per cent more — £3 — than the same program on the Spectrum it is a rip-off.

You would be forgiven for expecting a far better version. After all the Amstrad has many unique commands which are ideally suited to this particular program.

Imagine the three sound channels all adding their cacophony to the excitement... none of it. Imagine all those pens with variably flashing inks dazzling you with an ever-changing screen display... none of it. What about the windows and the interrupts and...oh well, need I go on?

Yes, you've guessed it, just another translation, not an Amstrad program at all.

Why are so many software houses prepared to ignore these wonderful facilities and still structure their prices as though a program bespoke to access Locomotive BASIC had been painstakingly produced? D.H.

Price: £8 95

Publisher: CP

Address: 10 Alexandra Rd, Harrogate, N Yorks



Answer Back — Sport

I must confess I didn't like the idea of a quiz on the computer. Most of them are very unimaginative and allow little interaction. The limited nature of any databank of questions is usually another drawback. This, I'm pleased to say, does not apply to Answer Back.

Firstly, I was amazed at the size of the databank; 26 lots of 30 questions. Some of the subjects included were Club Football, Meccas of Sport, Cricket and 1983. Just about every sporting fancy is taken care of if you include the catch all, Pot Luck — which has nothing to do with snooker!

Once a quiz has been loaded you have the option to choose a multiple choice or yes/no format or a combination of both. You can also choose to be timed and you can choose to have the questions in sequence or at random.

There is a graphic reward sequence at the end of each session. A choice of either football, where you play the goalkeeper, or tennis in which you simply hit the ball back. Not impressive but a nice addition for the junior members of the family.

For me the winning feature was the program's ability to create your own quiz in the given format. You aren't limited to sport of course and this gives the program great potential in providing a selective and individualised approach.

It's an extremely user friendly program and even provides a verify procedure thus eliminating the risk of spending time creating, saving and then discovering some fault with the cassette.

If you like quiz games this one is good.

M.P.

Price: £9 95

Publisher: Kosmos

Address: 1 Pilgrims Cl, Harlington, Dunstable, Beds LU5 6LX

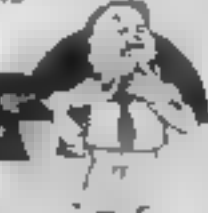
C64



C64



AMSTRAD



BBC

ELECTRON





Sprite Machine

This Norwegian package is intended to provide a versatile system for the creation and manipulation of sprites.

The program Turbo LOADs and on running gives the usual editing screen. The majority of the screen is taken up by a giant editing area. The remainder gives the colours in use and a life size representation of the sprite currently under definition. By moving a cursor around the editing area, you can draw your sprite. By pressing M the system toggles into multicolour mode. The logic of the software takes care of the handing of colours in this mode and makes life quite simple.

A wide range of commands are provided covering the scrolling, flipping and reversing of the design. By use of one key commands you can step through the sprite designs and copy designs. The package claims to support up to 336 designs, which should be enough for anyone. Once you've completed your designs, they can be saved as a data block, or converted to DATA statements.

To simplify the creation of animated sequences, you can step through a specified sequence of designs at the speed of your choice. If you want to create complex multicoloured designs or use fancy graphical tricks, there is an overlay mode. This allows you to superimpose all eight sprites on the same spot.

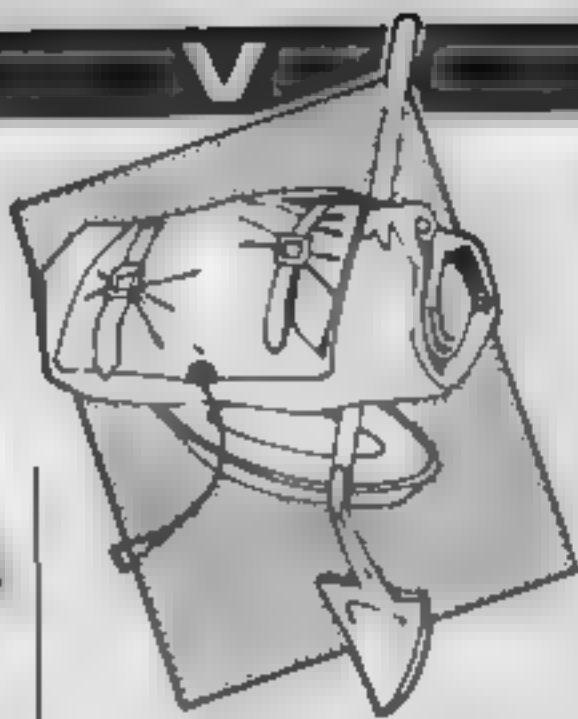
Overall this is a well designed package which simplifies a tedious job well. A character design would have been a useful addition but the package does stand well as it is

A.W.

Price: £9.95

Publisher: Amrog

Address: Unit 10, Victoria Industrial Estate, Victoria Rd, Dartford, Kent



Tracer Sanction

Your task in this adventure is to track down an interplanetary criminal called Wing. To do this you must travel the galaxy searching for clues.

As with most of Activision's products, this disc based adventure is slick and well produced. The game is illustrated by use of multicolour pictures and text. The bottom four lines of the screen act as your prompt area and the text scrolls up behind the picture. By using RETURN you can look at the last 25 lines of text. The graphics and beautifully designed and use both colour and shading to good effect. Whilst the pictures are rapidly up loaded from the disc, they appear to be drawn rather than presented as a block of data — very neat. Unlike some other disc based games, the time spent accessing the disc is short.

The command parser is complex accepting a huge variety of command syntax and multi sentence commands. The function keys and abbreviations can be used to shorten entries. You can gain help from a passing Condor although it's thin on the ground. A superb touch in this package is the provision of a detailed tutor for the new adventurer. They are probably the best instructions I've come across.

The interesting aspect of this plot is that you gain clues by travelling to various planets. Your choice of route, however, is up to you. The main problem is to acquire money to buy fuel. You are offered 80 locations and the game is reasonable complex and testing. The price is a little high, but on the whole it's great fun.

A.W.

Price: £19.99

Publisher: Activision

Address: 15 Harley Hse, Marylebone Rd, London NW1 5HE



Forth+

The Abersoft implementation of Forth has been around for some time for the Spectrum, and it's not surprising that this version for the 64 has appeared. The package is distributed on cassette, but disc users need not worry since full details are given on how to transfer it to disc.

The package is an implementation of Fig-Forth with extensions for sound, sprites and graphics. Unlike normal Forth, however, RAM is used to store screens rather than virtual memory on disc or cassette. Whilst this is becoming more common with larger memory machines, other systems such as MMS Forth provide direct flushing to disc or cassette.

The additional words, particularly those for sprites and sound, are extensive. The graphics words are limited to simple high-resolution plotting and user defined characters.

For the serious user, a nice feature is the resident assembler. Once you get used to entering the mnemonics in reverse Polish style, this tool proves to be most valuable. The package is accompanied by a small instruction booklet which whilst appearing to be comprehensive, tends to be rather superficial and occasionally obscure. The section relating to the assembler is particularly poor. The booklet indicates that it isn't intended as a tutor for new users of Forth, but more details and examples wouldn't have gone amiss.

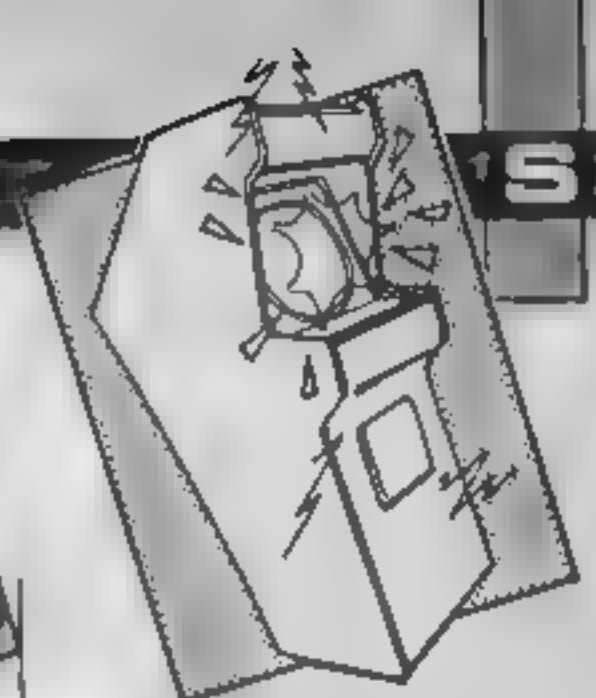
Notwithstanding the weak documentation, this is a powerful and effective implementation of this excellent language. A nice bonus is that a word — ZAP — is provided to save your games in a safe form if you wish to market them.

A.W.

Price: £14.95

Publisher: Melbourne Hse

Address: Castle Yard Hse, Castle Yard, Richmond TW10 6TF



Jet Set Willy: The Final Barrier

It's the Spectrum hit featuring Miner Willy on his weary travels around the mansion, collecting discarded party junk so that Maria, his disapproving housekeeper, will allow him into his four-poster for some shut-eye!

On the Amstrad, this loads in 22 blocks and seems to take an age. How about a built in save-to-disc option, software houses? And the software protection card will no doubt foil the tape-to-tapers. Once the code is in, however, what joy! The Moonlight Sonata in glorious stereo, which sounds even better when amplified. Really great, as is the bouncy two-part tune which accompanies the action.

The screen is a faithful reproduction of the Spectrum version, at least in style. Small mono-coloured sprites smoothly walk, bounce, spin, twist and cavort about. Flying pigs, vacuum cleaners, cooks, ducks; you name it! Strangely, the chosen colours seem dull in comparison, though the bonus is a number of new rooms, just as tricky as the original, and the option to change colours to ones more suited to the green-screen monitor; very thoughtful.

There's no doubt this is a classic; challenging, addictive and fun. But given that this is a conversion to a more sophisticated machine, a fact acknowledged by the superb music, couldn't the graphics have been better too? Bigger, for example, has multi-coloured sprites, and more interesting screens. Given too, the enormous interest in "cheat pokes", why not build in a practice mode which gives the option of infinite lives and jumping to any room?

D.M.

Price: £8.95

Publisher: Software Projects

Address: Bear Brand Complex, Allerton Rd, Woolton, Liverpool L25 7SF

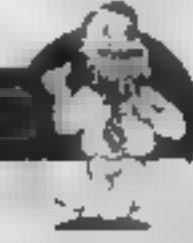
C64



C64



C64



AMSTRAD





Caveman Capers

The main virtue of this game is its simplicity. You move along the scrolling screen, occasionally accelerating and jumping past or over the obstacles.

The caveman is standing on some tortoise-like creature and dashing across the screen to jump over holes, avoid the pterosauria, snakes, mushrooms and... but that's as far as I could get. Your progress is recorded section by section on a bone up above and includes a high score record.

The graphics are good and you can detect the odd humorous touch. If you stumble or get hit then you come crashing over the animal being stood on by the caveman. Was it a turtle — at that speed! — or a sheep? Some smart alec expert who had been doing a dinosaur project at school suggested it was an ankylosaurus, huh!

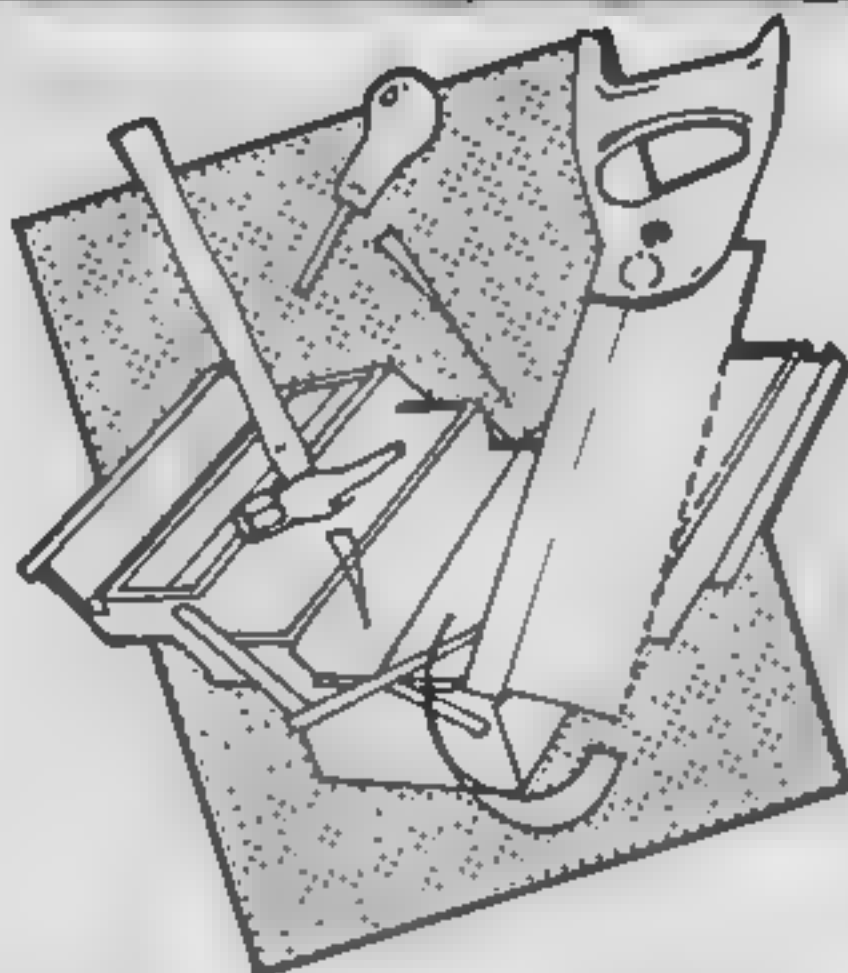
There is a friendly looking diplodocus which pokes its head into the screen and which you should try to avoid. It does have a friendlier mate, however, who clears a section of the screen and informs you when you've finished.

It's quite good fun for a while and my kids loved it but not a game to play for too long. Nice musical accompaniment which fortunately you can switch off. My biggest complaint is against the price, however, which seems high for a particularly ordinary game format in spite of the pretty pictures. **M.P.**

Price: £7.95

Publisher: Icon Software

Address: 65 High St, Gosforth, Tyne and Wear



The Illustrator

Gilsoft's utility, The Quill, has been a bestseller. It allows users to create, and even market, their own text adventures. The only limit is imagination, the program being very easy to use.

Now, Gilsoft has released The Illustrator, a supplementary program which allows you to include the one thing The Quill lacks — graphics — in your adventure. The two programs work well together. First, the text illustrator is developed as usual with The Quill. Then, The Illustrator is loaded. It loads in the first few bytes of the saved text, and works out how many blank graphic locations need to be set up.

The program is again mainly menu driven and very user friendly. It comes complete with a comprehensive manual which gives a step-by-step introduction and detailed description for later reference. The manual uses the text adventure enclosed with The Quill as an example to show the user what to do. Five of the locations are ready drawn, and the manual describes how to make the sixth.

Selecting Graphics from the main menu will present you with a blank screen and two cursors at the bottom. To draw, you move one cursor in any of eight directions, then press L for line, which links the two cursors. Both cursors can be brought to a totally unlinked area of the screen with the MOVE or PLOT commands.

You have full control over colour: rectangles can be filled

instantly, and other shapes more slowly, but efficiently. Areas can also be shaded in one of 255 patterns.

If you want to use a certain graphic more than once, for example a tree, there is a Sub-routine command. This allows you to draw a standard picture, then place it in any location, as often as you want, in one of 12 scales. Although this can make all the pictures look similar, if used properly it can be an extremely helpful function.

The graphics are stored in long strings, which are saved and interpreted by your Quilled adventures. Obviously adding graphics reduces the memory available for text, but wisely used, The Illustrator should not reduce prose too much.

The pictures themselves can be extremely attractive, if a trifle slow to build up. The examples given are very good, but strangely not very colourful. However, some people may not like the fact that they take up the whole screen, then disappear once a command is typed in, rather than remaining constantly on screen as in The Hobbit.

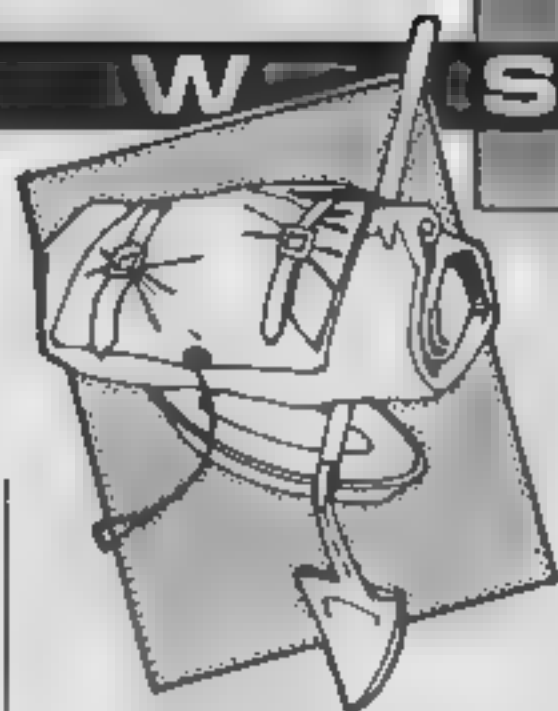
It should be fairly easy for anyone to draw using The Illustrator.

There is only one real drawback to this otherwise excellent piece — the price. At £15, it is very costly considering it is an additional program. For a new user to buy a complete adventure system would cost £30 — although this might be justifiable considering you could write a chart topper with it! **P.S.**

Price: £14.95

Publisher: Gilsoft

Address: 30 Hawthorn Road, Barry, South Glam



Mindshadow

Not being content with the arcade market, Activision has now entered the adventure field. This disc-based program offers both graphics and text and follows the current trends in adventuring. The plot is simple. You find yourself on a deserted island. Worse still, you have a dose of amnesia. Your task is to find out who you are and who dumped you in this predicament.

The format is fairly standard with each location illustrated in multicolour mode. The bottom few lines give the current text, but the return button toggles the graphics so you can check the last 25 lines of text.

The parser is quite competent, accepting multiple commands. You can use it to refer to the last item named and a wide range of commands are available. An additional command is THINK which may nudge some ideas from your memory. If you get stuck, you can invoke assistance from a friendly condor but it hasn't helped me much so far. The function keys can be used to enter the commonest commands.

The high spot of this game is the superb graphics, in fact the best I've seen. These appear to be of Koala pad quality but drawn rather than block loaded. The creator of these pictures has clear artistic abilities and has done a great job. The disc is accessed each time a picture is required but it's pretty fast.

Overall a tough and entertaining game which, unfortunately, is perhaps a little over priced.

A.W.

Price: £19.95

Publisher: Activision

Address: 15 Harley Hse, Marylebone Rd, Regent Park, London NW1 5HE

AMSTRAD



SPECTRUM



C64



numbers with DRAW (but not with PLOT). Add

```
98 REM DRAW VERTICAL
100 PLOT 127,100
110 DRAW 0, 45
```

and you'll see when you RUN. Now try:

```
120 DRAW 30 0
```

to see that DRAW starts from where you last finished; PLOT is used to start from a new position. Diagonals are just as easy — use non-zero numbers for both DRAW co-ordinates:

```
130 DRAW 30,45
```

Now, we ought to be able to make a little picture by adding.

```
140 DRAW 30 45
150 DRAW 30,0
160 DRAW 0, 1
170 DRAW 30,0
180 DRAW 0, 5
190 PLOT 100,100
200 DRAW 1,5
```

and RUNNING draws a rather angular boat. A pity for a boat to be too angular; you know how sailors like a well-rounded hull, so let's look at how to do that. We've been using DRAW quite happily with two co-ordinates after it: curvature is added by using a third number:

```
210 DRAW 30 0, 1
220 DRAW 0,45, 1
```

and you'll see that the Genoa is nicely filled in the breeze. Play around a bit with the curve; remove the minus sign, and you'll see the line curves in the opposite direction. Increase the 1 to a 2, and you'll increase the curvature. You should be able to fit your boat out with a spinnaker!

When you use numbers near 3, the curve is nearly a half circle. You can get an exact half-circle by using pi (the keyword on the M key), which is about 3.1415927 for anyone interested. Pi is the number of radians in a half-circle, and is much posher than using 180

dull old degrees. If you try to be too clever by using bigger numbers like 6, the line will go off screen and the Spectrum will have a nervous collapse — sorry, I mean give an error message.

Now nobody likes sailing so much on a dull day, so let's have some sunshine. The sun looks like a circle, so we'll try the CIRCLE statement. This needs two co-ordinates and a radius, but of course it should yellow, so add:

```
230 Y=0
240 CIRCLE 50,100 10
```

and a sun (of sorts) will appear. It would look better if it was solid yellow, wouldn't it? Unfortunately, there is no PAINT or FILL command in Spectrum BASIC, but for circles there is an easy trick:

```
250 FOR I=1 TO 10
260 CIRCLE 50 100
270 HE I
```

Don't sunbathe too long, your skin isn't used to it yet! See you!



DUCKWORTH HOME COMPUTING

EVERYTHING YOU NEED TO KNOW TO GET THE MOST OUT OF THE 64

by Peter Gerrard

For the more serious user of the Commodore 64, this book teaches you all about programming in Machine Code, with sections on double precision arithmetic and animation, along with a series of chapters on using the special features of the Commodore 64.

The all-important link to Basic is not forgotten, and the opening chapters form a guide to improving your Basic programming techniques, along with many program examples. Peter Gerrard, former editor of *Commodore Computing International*, is author of *Using the 64* and a regular contributor to *Personal Computer News*, *Which Micro?* and *Software Review* and *Commodore Horizons*. £6.95

40 BEST MACHINE CODE ROUTINES FOR THE 64

by Mark Greenhalghs

Provides 40 excellent machine code routines which can be incorporated into both Basic and machine code programs. The routines include useful utilities, such as the following. Print: no more need for those weird cursor symbols! Move: move an area of memory to another area. Pause: stop a listing at any time by pressing the shift key. Function keys: program the function keys. Copy: copy any part or all of the character ROM into RAM. Dope: POKE a 16 bit number into memory. Deek: PEEK the 16 bit number. List: list programs in any width to screen or printer. Ok: recover a NEWed program. Invert: invert all or part of the high res screen. Organ: play music while running another program. Scroll message: scroll a message across the screen while running another program. Flash character: put flashing text on the screen. Split screen: divide the screen into text and high res. Sound: make sounds easily without pokes. Envelope: allow complex sounds to be created without pokes. A listing of Extramon is also included. Mark Greenhalghs is the author of *Mastering the Commodore 64* and *Mastering Machine Code on the 64*, and a regular contributor to *Your 64*. £5.95

Write in for a full descriptive catalogue (with details of cassettes).



DUCKWORTH

The Old Piano Factory, 43 Gloucester Crescent, London NW1 7DY

Tel. 01 485 3484

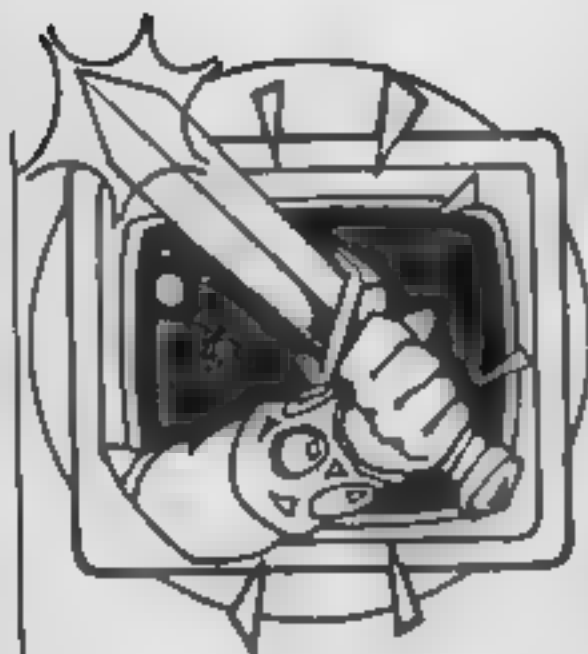
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VENTURES

Peter Sweasey makes a Wally of himself in Mikro-Gen's sequel to Pyjamarama, and he scares himself silly with Transylvanian terrors

Let me take you to a world which is mysterious and often magical, with Ventures, HCW's regular column dealing with adventures and arcades (arcade adventures for new readers). This week I shall be making a right Wally of myself in Mikro-Gen's follow-up to Pyjamarama, almost giving myself a cardiac arrest with two Transylvanian terrors, and searching in time... or at least for a time machine. Plus our regular helpline, and the last part of the map for Technician Ted

Reviews

"A charlie or a bungler or a burk, a nana or a nelly or a nurk, everyone's a Wally", sings Are You Being Served? comedian Mike Berry on side one of the game of the same name. This crossing over of media will not, I feel, further the field of music. In fact it's almost as bad as some of Mikro-Gen's earlier computer games. But I suppose it's a matter of musical taste. Now to the game...

Wally Week was the star of previously the best arcventure ever released, Pyjamarama. Everyone's A Wally also features him, along with friends Tom, Dick and Harry, plus wife Wilma and baby son Herbert. With the exception of the latter, all of these can be controlled by the player, in Lords of Midnight fashion.

The game is set in an average town, complete with butchers, bakers, school and post office. Each of the gang has a specific task to do; for example, Dick is a plumber, and must mend the town fountain. You also have to discover the combination to the bank safe, so that the gang can be payed, and survive by eating and drinking



Objects must again be used for the tasks, and there are plenty of them, ranging from the obvious (an empty bucket) to the ridiculous (chewing gum). Since you can only control one character at a time, the others wander around and will often take the object you need most. The game has three different "intervals" to measure your progress: morning tea break, lunch break and afternoon tea break. All this adds up to an incredibly complex game.

The best features from Pyjamarama are still here: the clear screen presentation, sound effects and two arcade games (asteroids in the telephone booth, decathlon in the sewers?). Graphics are stunning, some of the best ever seen on home micros, even the Spectrum. The characters are well and individually animated, there is a good level of interaction and control is simple.

Colour is masterfully used, although Spectrum owners have to put up with some attribute clashes. The game has a cartoon-like quality. The locations are varied and provide scope. The arcade skills are more dependent on avoiding this time, rather than jumping, but as with the previous game, arcade and adventure has been mixed perfectly.

There are a few minor flaws. Wilma is the only female and represents sexist stereotyping... guess what, she does the shopping. Less talented gamers

might find it too difficult, although keep reading Ventures for hints!

Packaging has never been a strong point with Mikro-Gen — this time the box is flimsy and how a game of this standard can have such pathetic cover artwork I do not know. The price rise is unfortunate too — I would have preferred a normal size box and no record at a cheaper price. Finally, a SAVE function should have been included, if only at the tea breaks.

In general, however, this is an improvement on Pyjamarama, and the best arcventure you can buy. As a sequel it is better than Alien 8 (or Knight Lore 1½ as I call it). If you own a 48K Spectrum, C64 or Amstrad, this is a must. It costs £9.95. Ventures rating: *****

Now a look at two adventures designed to send chills down your spine. Games with spooky scenarios have been attempting to scare people almost since the games market started. Adventure International markets The Count, Voodoo Castle and Ghost Town, but recently two newer games have arrived Castle of Terror from the well-respected Melbourne House, and Castle Dracula from the dreaded Duckworth (how do they manage to think of such original titles?).

The scenario is more or less the same for both. You start in a village of enslaved villagers, near a suitably gloomy forest, and must enter a creepy tower

to kill the Count. Of course, being a creepy tower, various nasty creatures will try to kill you: zombies, skeletons, werewolves and the like.

So which game should the C64 owner with a lust for blood buy? The Melbourne House game is, as to be expected, very polished. Slick, attractive graphics appear at every location, making full use of colour and high resolution. In the background atmospheric music tinkles away, which is fine at first, but tends to be turned off eventually.

The village is convincingly portrayed; there is a good level of character interaction allowing you to talk to the villagers, and full sentence construction is allowed. Vocabulary is good, and a full list of verbs is available by typing VOCAB. Unfortunately, some of the other commands listed in the instructions don't work. Neither the scenario nor problems are original, but the game is well implemented.

The Duckworth program is text only. This is not necessarily a bad thing — but here the text is dull and lifeless. Unlike the Melbourne House game, descriptions are woefully short and unimaginative. There is no full sentence input, or character interaction, but there is a maze. Vocabulary is poor; frequently the interpreter does not recognise nouns used in the text. Response times, thankfully, are fast, and there is a sense of humour buried somewhere in the game. The problems are mostly clichés, although I was entertained trying to open a suit of armour with a tin opener! In general, however, this is like most Duckworth releases; incredibly average.

To sum up, neither of these programs is stunning. Of the two, Castle of Terror is much better — it is slightly easy for some though, and at £9.95 overpriced, thus a Ventures rating of ***. The Duckworth game is £2 cheaper, but also totally boring, so a Ventures rating of *.

I'm afraid Duckworth has released more than one game. Time Search takes the unoriginal theme of time travel. You start in a typical suburban town, have to find a time machine, then adventure through the ages, no doubt starting in prehistoric times, when most games like this start.



Gaffney's letter in HCW 100, about the Scott Adams game, Return To Pirates Isle. He says, quite correctly, that the Keep out sign means that this is where adventure two (Pirates Isle) starts. You don't need to have Pirates Isle to play the sequel.

He also says: "One hint for people playing this adventure for the first time *don't* wake the pirate until you can see the rum on the hill summit, and don't make the glue until you have the raincoat. If you keep drowning then hold something, although it won't appear on the inventory list."

Can anyone help Mark find the alarm clock, get the fan blade to the sea bed or reach the Isle in the distance? I hope to review the game soon.

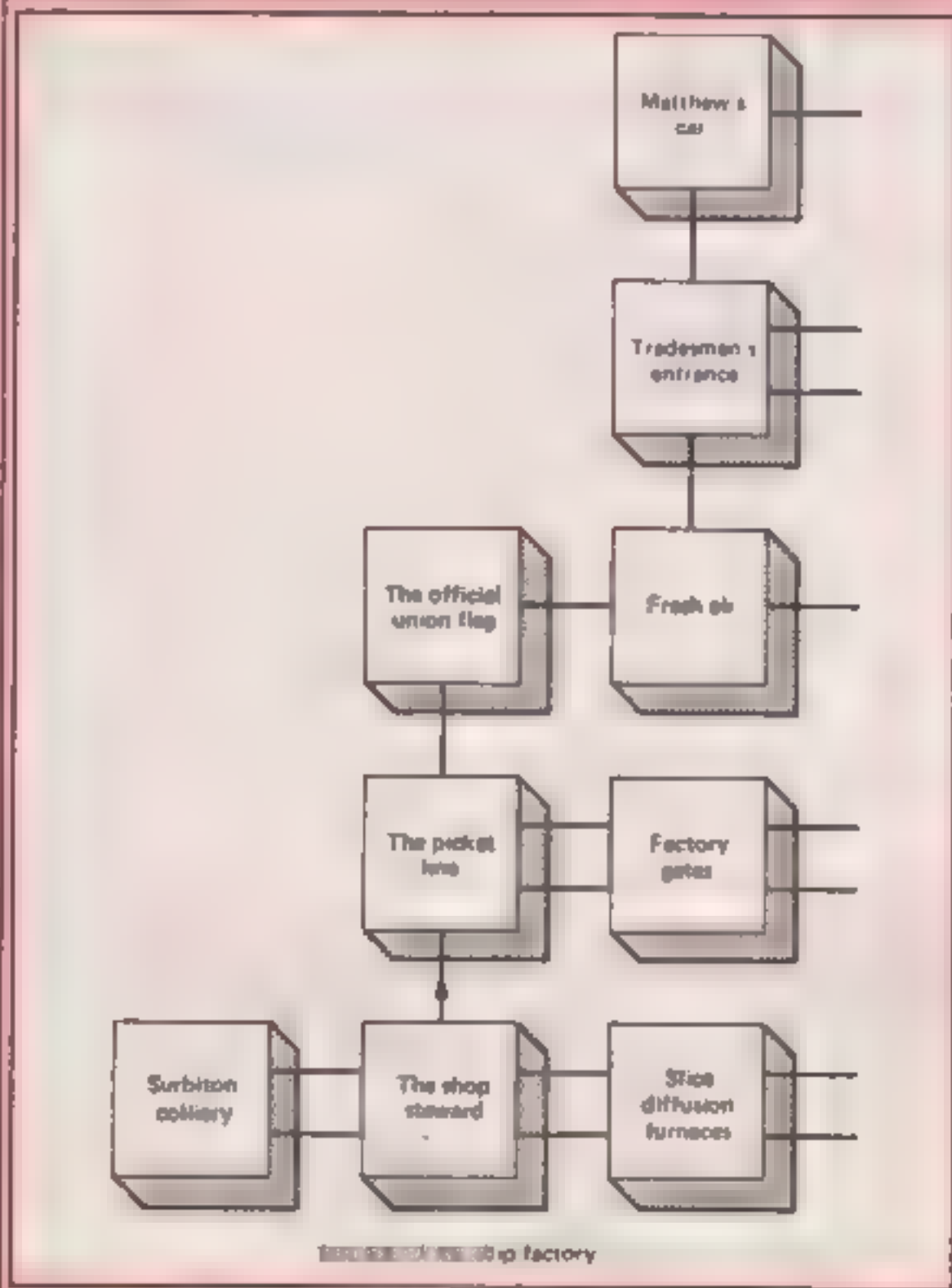
Thanks for your letter, Mark, who also criticises my clues for being a bit direct. That shall be rectified at once.

Spiderfans who still need help with spinning a web: the penthouse picture needs careful examination. Read the words closely, then remove what you need to. Once you have made the web, jump from Mysterio.

Technician Ted is rightly doing well in the charts. I'm glad to see. Here's the final part of our map. If you put them together, the four parts show all the rooms you can reach at the start of the game. If you find any more, further left than this, write and tell me. The fourth task for anyone struggling is in the fuming cupboard.

Finally, I return to Everyone's A Wally. By the time you read this, most people should have reached morning tea break. Fortunately I reached this point within a couple of days, with a little help from ace arcventurer Graeme Stewart. The first job is a *plumb* task. You need to plunge straight into it, and entering the zoo might drive you nuts. Now you can fill the bucket. Use your common sense to make cement; then lay it like a garden. Now an electric atmosphere; to stop lightning strikes, blast them away until you hear a tune. Smooth operator...

Back next time with hints, hits and mere mediocrities. Happy venturing...



The time theme has been better explored in Level 9's Lords Of Time and even Eureka! This is basically the same program as Castle Dracula with different words, so the same comments

apply. Same rating too. Please, no more Duckworth games!

Helpline

Mark McGurn of Cheshire has written concerning Kathleen

Send your problems, hints and views on adventure and arcventure games to Ventures, Home Computing Weekly, No. 1 Golden Square, London W1R 3AB

Brian Jones continues his easy-to-follow guide to Commodore BASIC

WELCOME TO BASIC

How did you get on with the problems I set in my last article? Here are possible solutions.

RUN it and what happens? That's how the computer tells you it's waiting for something. In this case it wants a value. So

```
1.
10 LET L=5
20 LET P=L*1.76
30 PRINT L;"LITRES IN PINTS" ; P
```

```
2.
10 LET P=19.95
20 LET UP=P/48
30 LET TP=UP*1.15
40 PRINT"UNIT PRICE INCLUDING VAT =" ; TP
```

I recommend that you use variable names which relate to their usage, such as UP for unit price and TP for total price, for your own reference. The computer checks that names start with a letter, that no characters other than letters or numbers are used and that the name doesn't clash with one of its own reserved words, like LET or PRINT. You can't use a variable called LETTER or OUTLET for example. Apart from that it only registers the first two characters, so it would take TP1 and TP2 as the same name. For this reason and to cut down on the typing, keep the names very short.

Now let's look again at the punctuation in the PRINT statements. The semicolon allows message and value to run on one after the other. When the variable followed the semicolon, the computer put two spaces before it started the digits. One space is permanent and the other is reserved for a minus sign, if needed. It also puts one space after the last digit.

Now it's time to come clean. There's something about all the programs so far which is contrary to what computer programs are all about! As the programs stand, they only work for one situation. To change the values they work on, you'd have to change the program. OK, that's not difficult; you can just enter a new line with a new value. But fundamentally that's not how programs are written. In the first of this series I showed you how a BASIC program can stop and await data or instructions. To achieve this we use an instruction called INPUT. Take program 1 above and replace line 10 with a new version.

```
10 INPUT L
```

enter 1, 5, 42 or 999 — whatever you like. When you press the Return key the answer appears underneath

INPUT has the same effect as LET — a table of variable names is begun in the computer's memory with the name L and the value 5, or whatever you choose. Later, when on lines 20 and 30 the name L is used, the computer can look up the value which L has, and use it.

INPUT has a similarity to PRINT in that it can display messages. We can use this to inform whoever is RUNNING the program what it wants. For example.

```
10 INPUT "HOW MANY LITRES TO CONVERT TO PINTS";L
```

Notice the punctuation. Quotes around the message, then a semicolon before the variable name. Don't put a space before the semicolon, it would cause a syntax ERROR. By the way, this instruction won't fit on to one line. Don't worry, the computer will accept up to 80 characters — two screen lines — as one program. Here's another example

```
10 INPUT"GIVE ME A SPEED IN M.P.H."
20 PRINT"THAT'S" ; S*1.6093 ; "KILOMETRES PER HOUR"
```

And although I didn't do so at the start, as well as PRINTing a variable, you can PRINT the answer to a calculation. Here's another.

```
10 INPUT"WHAT'S YOUR WEIGHT IN STONES, LBS";S, LB
20 LET WT=S*14+LB
30 PRINT"YOU WEIGH" ; WT*0.4536 ; "KILOGRAMS"
```

Just as you can PRINT more than one thing per PRINT, you can INPUT more than one thing. You will find that you can either put in the two values,



each followed by Return, or together, separated by a comma

Don't worry if your value spills from one line to the next. The computer only takes a comma or Return as the end of a value. But do beware when you try your own messages: if the message is longer than one line all except the most recent Commodore 64s and all VIC-20s have a bug which makes the computer think the message is part of your value. And if you give it any words when it's expecting numbers it displays "REDO FROM START". So don't expect it to accept 8 STONES, 3 LBS

Now I promised last time that

I'd tell you the purpose of those strange characters the cursor keys give once you've typed a " They enable you to move the cursor or clear the screen during

a RUN. Clear the program currently in memory by entering NEW, then enter the line

```
10 PRINT"J"
```

The reverse heart is the symbol generated by attempting to clear the screen with the CLR/HOME key whilst in quotes. Unfortunately, on the printer these characters look slightly different from on the screen. RUN that and see the effect, before adding

can use this feature to provide what is called a default option. What's more, let's edit line 40, rather than retype it. Enter LIST 40 to get it on its own. Then move the cursor back up to it and along it until you reach the second "

Notice that now you can go

```
20 PRINT "THIS PROGRAM CALCULATES THE UNIT PRICE"
30 PRINT "GIVEN THE NUMBER AND PRICE PER CASE"
```

RUN this and note the effect of the cursor down character at the start of the message on line 30.

between the two quotes and the cursor still moves properly. We will now open up a space with the INST/DEL key. Hold the

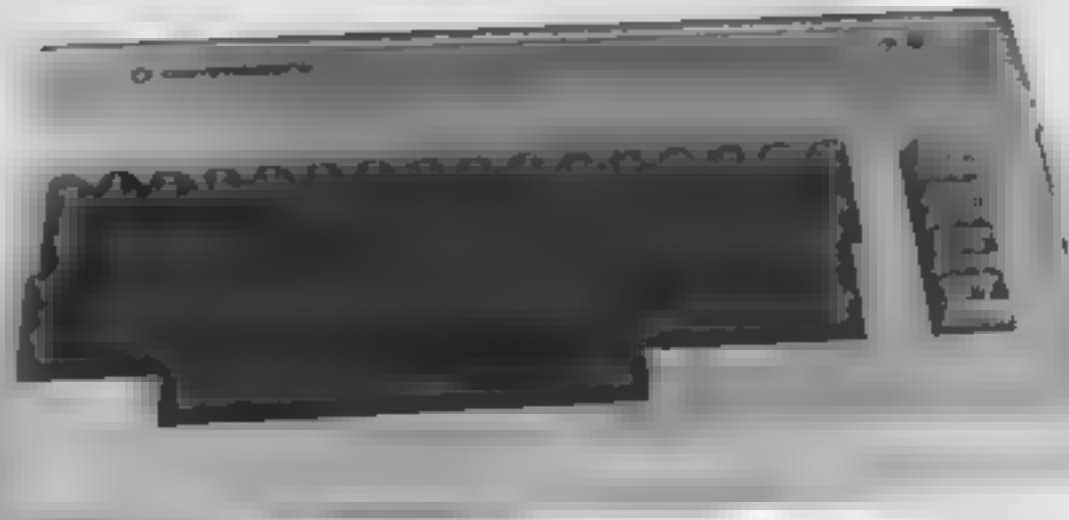
```
40 INPUT "NUMBER IN CASE"
50 INPUT "PRICE PER CASE IN £'P"
60 PRINT "UNIT PRICE = £'P / N"
```

RUN it and see the result. I think spacing the lines makes them much more readable. This feature is sometimes known as the "programmed cursor". But, there's more to come.

Suppose most, but not all, cases contained 24 items. We

shift key down and tap the INST/DEL key eight times. This also turns on programmed cursor mode for those eight spaces.

Now carefully type two spaces, the digits 2 and 4, four cursor lefts which come out as



blocks with a white line down them. Beware as you do this, because unlike the programmed cursor caused by "", even Delete causes a strange character during this operation. Now press Return

Find an empty line and enter RUN. See how a 24 appears under the cursor after the ? from line 40. If you press the Return key, the program takes the 24 as your response. If you overtype another value, that's fine. Whatever is there when Return is pressed is the value

used.

Here are two programs for you to write answers next time.

1. A lawn fertilizer must be supplied at the rate of 50 grams per square metre. Write a program to calculate the weight needed for a rectangular lawn, having INPUT the length and breadth

2. Change the above program so that the application rate is also INPUT, but the default value of 50 is placed under the cursor

Bye for now



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REARWARD

Eric Doyle peered into the workings of the new Seiko RC-1000 wrist terminal

It seems that the current buzzword in computer circles is "portability". As the size of machines reduces, the capabilities of the once humble wrist-watch increase. Now Seiko has produced a combined watch and database for the jet-set executive

Measuring only 41.8 x 10.6 mm and weighing only 60 grams, this little giant carries 9K ROM and 2K RAM with an LCD display of two rows, each having 12 characters. Each character consists of a 5 x 7 dot matrix and gives a pleasant, readable display.

The watch, or datagraph, normally shows a 12 hour time display with the day and date but a daily alarm may be set at the push of a few of the six buttons which are positioned below the LCD window.

So far nothing new or startling. However this watch can be programmed with data, which takes its capabilities way beyond the usual chronometer.

The RC-1000 is supplied with disc or cassette-based software and a lead which permits it to be linked and programmed by a mother computer. The one I tested was connected directly to the user port on my Commodore 64 but versions for other popular computers are available, though some require RS232C interfacing. The software permits the owner to enter four types of data: weekly alarm, schedule alarm, world time and memo. The functions are stored into 80, 24-character entries and just how these 80 lines are divided among the four data categories is decided by the user.

Each of the alarms can have an upper line with a 12-character reminder of its purpose, such as RING OFFICE or FRED'S BIRTHDAY. The lower line is reserved for the alarm data which for weekly alarms consists of day and time, the alarm going off each week according to this data. The schedule alarm is a once-daily alarm, being set for a fixed time and date ranging from today until the year 2020.

World times can be selected so that the current time in any selected city can be displayed according to its time zone. The software is written in unprotected BASIC to allow the input of new data for any city, which may be of interest to the user but not included in the standard listing of 158 cities.

By far the most flexible function of the watch is the memo facility. Memos may be subdivided under any self-selected category such as PHONE NUMBERS or CHECK LIST and, depending on available memory space, any number of items may be listed under the relevant heading

Now for the catches. The price of this package is expected to be around £119 and, despite the claim of user-friendly software, I found the program laborious and time consuming despite thorough documentation. The watch is directed at the busy executive

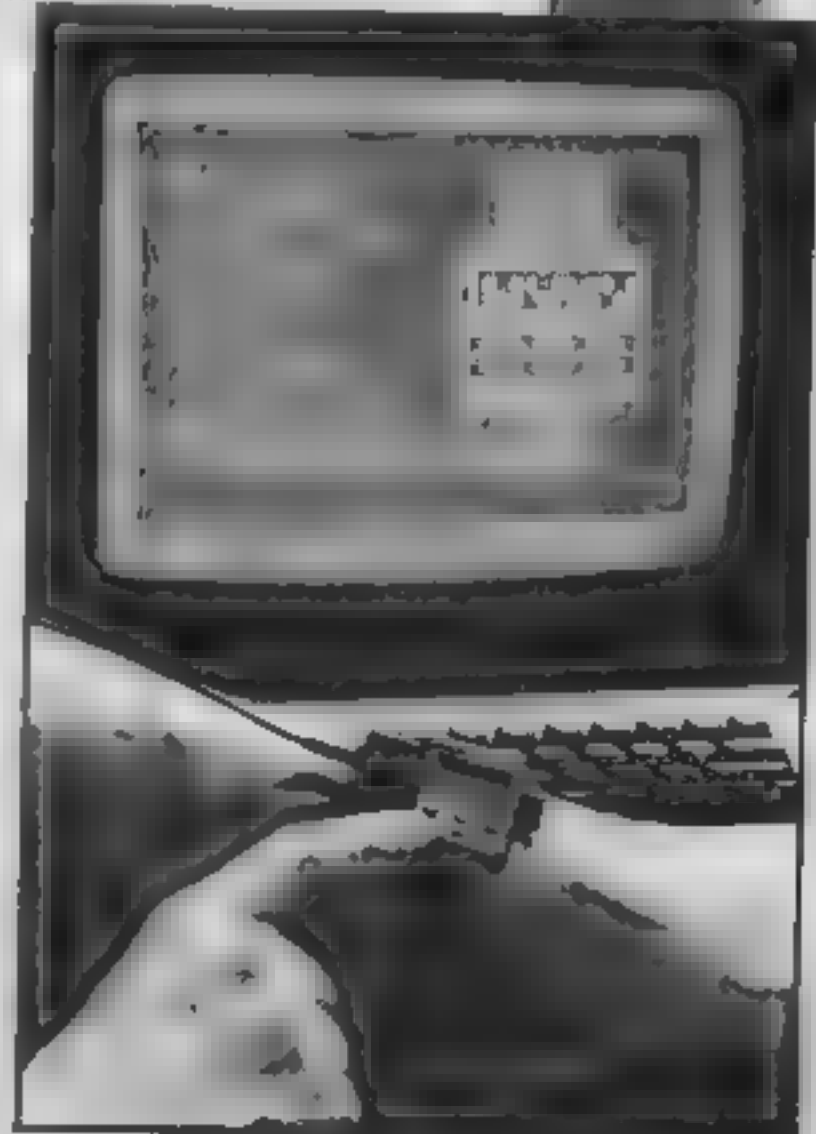
who would probably delegate watch programming to a secretary or personal assistant, few of whom, I suspect, would find it a pleasant or simple task to perform.

Given improved software, this is a watch with a future but at present my view parodies a quote from Sam Johnson (1709-1984): this watch is like a dog walking on its hind legs. It is not done well, but you are surprised to find it done at all.

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COMMODORE 64 ADVENTURE

VENTURE INTO THE UNKNOWN



Use your initiative to find your way through this adventure by Simon Eyre

This adventure for the Commodore 64 has 15 locations. The vocabulary is

limited, but your real aim is to guess what each object does, and in which order to pass through the rooms.

The scenario and action are described in the text, so start those fingers typing and in no time you'll be able to wander off into the depths of Erodommoc.

Vocabulary accepted
 QUIT, INV (inventory), HELP (which provides three clues),

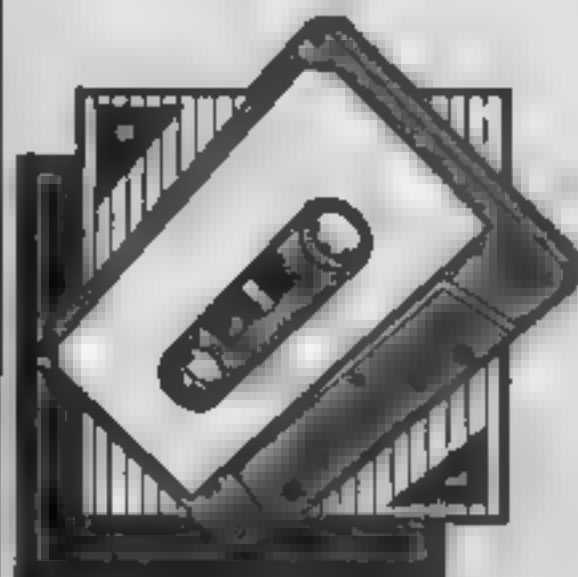
JUMP, KILL, SWIM, EAT, GET object, DROP object, OPEN DOOR, UNLOCK DOOR, RUN to random location, WAIT

How it works

- 5-37 initialise
- 40-160 instructions
- 170-250 print location, objects etc
- 260-310 get command and verb
- 320-600 verify command
- 1000-7998 various routines
- 10000-10250 data for locations

```

5 DIML$(15),N(15),S(15),E(15),W(15)
7 DIMOB$(15),C$(20),O$(5)
10 FORI=1TO15:READL$(I),N(I),S(I),W(I),E(I)
20 NEXTI
30 FORI=1TO15:READOB$(I):NEXT
35 FORI=1TO14:READC$(I):NEXT
37 FORI=1TO5:O$(I)="":NEXT
40 PRINT"J":POKE53260,6:POKE53281,15
50 PRINT"OPERATION MAINFRAME"
55 PRINT"-----"
60 PRINT"YOU ARE LOST IN THE WORLD OF ERODOMMOC."
70 PRINT"YOU ARE IN THE HQ OFFICES READING ABOUT"
80 PRINT"THE MISSION YOU WERE TOLD TO DO.IT READ:"
90 PRINT"TO ESCAPE FROM ERODOMMOC YOU MUST FIND"
100 PRINT"THE HOLY MAGNETIC TAPE AND SLOT IN INTO"
110 PRINT"THE MAINFRAME."
120 PRINT"YOU LOOK AROUND THE ROOM IS STRANGE AND"
130 PRINT"HEARD PEOPLE GRUNT FIERCLY.YOU DECIDE"
140 PRINT"TO MOVE.YOU CROSS YOUR FINGERS AND HOPE"
150 PRINT"PRESS ANY KEY TO BEGIN."
160 POKE198,0:WAIT198,1:POKE198,0
    
```



```

170 X=8:MS="":V$=""
180 PRINT" YOU ARE IN ";L$(X):V$="":MS="":Q=0:CS=0
190 PRINT" VISIBLE EXITS ARE:"
200 IFN(X)<>0THENPRINT" NORTH",
210 IFS(X)<>0THENPRINT" SOUTH",
220 IFE(X)<>0THENPRINT" EAST",
230 IFW(X)<>0THENPRINT" WEST",
240 PRINTPRINT" YOU CAN SEE: ";OB$(X)
245 FORI=1TO5:IFX=8ANDOB$(I)="MAG TAPE"THENGOSUB7000
246 NEXT
250 INPUT" WHAT SHALL I DO ";A$
260 FORI=1TOLEN(A$):X$=MID$(A$,I,1)
270 IFX$="" THENGOTO290
280 MS=MS+X$:NEXT
290 FORI=1TO20:IFMS=C$(I)THENGOTO305
300 NEXT:PRINT" I DON'T UNDERSTAND ";MS:FORI=1TO1000:NEXT:GOTO180
305 IFMS="HELP"ORMS="QUIT"ORMS="SWIM"ORMS="RUN"ORMS="WAIT"ORMS="INV"THEN400
306 IFMS="JUMP"THENGOTO400
310 FORI=1TOLEN(A$):X$=MID$(A$,I,1):IFX$="" THENG=1
320 IFG=1THENV$=V$+X$
330 NEXT:G=LEN(V$):V$=RIGHT$(V$,G-1)
335 IFX=4THENGOSUB2000
340 IFX=1THENGOTO350
345 IFX=9THENGOSUB2500
350 IFX=14THENGOSUB3000
355 IFX=15THENGOSUB3500
360 IFMS="GO"ANDX=3ANDV$="EAST"THENGOSUB1500
370 IFMS="GO"THENGOSUB1000
380 IFMS="GET"THENGOSUB4000
390 IFMS="DROP"THENGOSUB4000
400 IFMS="INV"THENGOSUB5030
410 IFMS="HELP"THENGOSUB5060
420 IFMS="RUN"THENGOSUB5110
430 IFMS="QUIT"THENGOTO6000
440 IFMS="SWIM"THENGOSUB5120
450 IFMS="WAIT"THENPRINT" TIME PASSES":FORI=1TO2000:NEXT
460 IFMS="KILL"THENGOSUB5170
470 IFMS="JUMP"THENGOSUB5220
480 IFMS="EAT"THENGOSUB5280
480 IFMS="OPEN"THENGOSUB5320
500 IFMS="UNLOCK"THENGOSUB5370
520 PRINT" COMMAND EXECUTED"
530 FORI=1TO400:NEXT:GOTO180
600 PRINT" THE DOOR THAT WAY IS LOCKED!"
610 FORI=1TO1000:NEXT:GOTO180
650 PRINT" I CANT CARRY THAT":FORI=1TO1000:NEXT:GOTO180
999 END
1000 IFV$="NORTH"ANDX=7ANDN(X)<0THENGOTO600
1005 IFV$="EAST"ANDX=2ANDE(X)<0THENGOTO600
1010 IFV$="SOUTH"ANDS(X)>0THENX=S(X):GOTO1060
1020 IFV$="NORTH"ANDN(X)>0THENX=N(X):GOTO1060
1030 IFV$="EAST"ANDE(X)>0THENX=E(X):GOTO1060
1040 IFV$="WEST"ANDW(X)>0THENX=W(X):GOTO1060
1045 IFV$="EAST"ANDX=3THENPRINT" DOORS ON THE ROOF.":FORI=1TO1000:NEXT:GOTO180
1050 PRINT" I CANT GO THAT WAY.":FORI=1TO1000:NEXT:GOTO180
1060 RETURN
1500 FORI=1TO5:IFOB$(I)="POGO STICK"THENGOTO1520
1510 NEXT:PRINT" YOU CANT REACH THE DOOR TRY JUMPING."
1515 FORI=1TO1000:NEXT:GOTO180
1520 RETURN

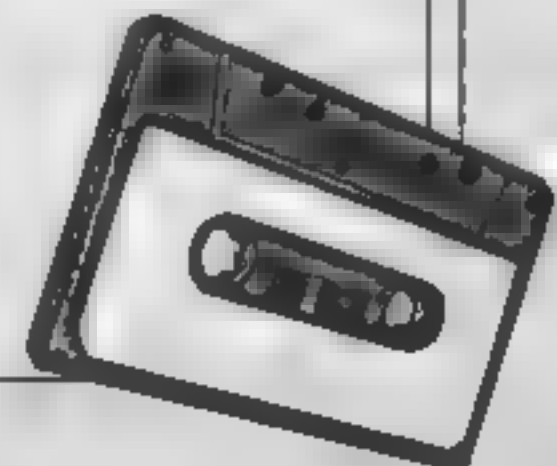
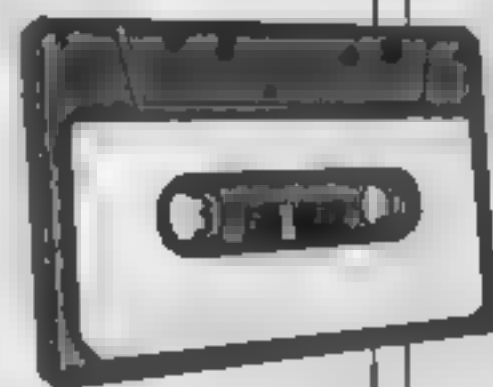
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2000 PRINT"☹A BIG PINK SPIDER BITES YOUR HEAD."
2005 PRINT"BUT LUCKILY YOU SURVIVED.THE SPIDER"
2010 PRINT"LAUGHS AND DIES."!CX=1
2020 FORI=1TO1000:NEXT:RETURN
2500 PRINT"☹A BIG MOUSE COMES OUT OF ITS HOLE!"
2510 FORI=1TO5:IF0$(I)="CHEESE"THENGOTO2550
2520 NEXT:PRINT"HE BITES OFF YOUR HEAD."!GOTO6000
2550 PRINT"THE MOUSE EATS THE CHEESE AND DIES!"
2560 PRINT"THE CHEESE WAS POISEND.GOOD JOB YOU"
2570 PRINT"DIDNT EAT IT EH?"!0$(I)="!"CX=1
2580 FORI=1TO2000:NEXT:RETURN
3000 PRINT"☹THE EDITORS PET DRAGON RUNS AT YOU!"
3010 FORI=1TO5:IF0$(I)="SWORD"THENGOTO3050
3020 NEXT
3030 PRINT"IT EATS YOU AN TURNS AWAY TO DRINK ITS"
3040 PRINT"MILK.THE EDITOR IS SINGING IN THE BATH"!GOTO6000
3050 PRINT"YOU LUNGE YOUR SWORD INTO THE DRAGON."
3060 PRINT"ITS DEAD.THE ED WILL HAVE TO GET ANOTHER"
3070 FORI=1TO3000:NEXT:RETURN
3500 PRINT"☹LAZERS ZAP TOWARD YOU!"
3510 PRINT"YOUR HAIR BURNS!"
3520 FORI=1TO5:IF0$(I)="MIRROR"THENGOTO3550
3530 NEXT
3530 PRINT"THE RAYS SUDDENLY HIT YOU YOU FRIZZLE"
3540 GOTO6000
3550 PRINT"THE RAYS REFLECT UNTIL THEY DIE OUT."
3560 FORI=1TO3000:NEXT:RETURN
4000 IFV$=0B$(X)THENGOTO4030
4010 PRINT"☹I DONT SEE THAT HERE!"
4020 FORI=1TO1000:NEXT:GOTO100
4030 IFV$="MAINFRAME"ORV$="NOTHING"ORV$="BLOOD"THENGOTO650
4050 FORI=1TO5:IF0$(I)="!THENO$(I)=0B$(X)!GOTO4070
4060 NEXT:PRINT"☹NO ROOM IN BAG!"!FORI=1TO1000:NEXT:GOTO100
4070 0B$(X)="NOTHING"!RETURN
4080 FORI=1TO5:IF0$(I)=V$THENGOTO5000
4090 NEXT:PRINT"☹IM NOT CARRYING IT"!FORI=1TO1000:NEXT:GOTO100
5000 IFV$="GLUE"THENPRINT"ITS STUCK I CANT DROP IT"!GOTO5030
5005 PRINT"☹A GOBLIN STEALS THE "V$!" AND TAKES"
5010 PRINT"IT TO HIS DEN ITS LOST FOREVER"
5020 0$(I)="!"FORI=1TO1000:NEXT:RETURN
5030 PRINT"☹YOU ARE CARRYING!"
5040 FORI=1TO5:PRINT"☹"!I,0$(I):NEXT
5050 FORI=1TO2000:NEXT:RETURN
5060 K=INT(RND(1)*4)+1
5070 IFK=1THENPRINT"☹MICE LIKE CHEESE."
5080 IFK=2THENPRINT"EXPERIMENT WITH OBJECTS"
5090 IFK=3THENPRINT"REFLECT THE RAYS ??"
5095 IFK=4THENPRINT"DONT EAT GRASS OR THE ???!"
5100 FORI=1TO1000:NEXT:RETURN
5110 X=INT(RND(1)*15)+1:RETURN
5120 IFX<>6ANDX<>5THENPRINT"☹I SEE NO WATER!"!FORI=1TO1000:NEXT:GOTO100
5125 K=INT(RND(1)*3)+1
5130 IFK=1THENPRINT"☹THE WATERS COLD!"
5140 IFK=2THENPRINT"YOU FREEZE AND DROWN!"!GOTO6000
5150 IFK=3THENPRINT"A FISH BITES YOUR BUM"
5160 FORI=1TO1000:NEXT:RETURN
5170 PRINT"☹I SEE NOTHING TO KILL!"
5180 Y=INT(RND(1)*2)+1
5190 IFY=1THENPRINT"YOU KILL THE FLY ON THE WALL"
5200 IFY=2THENPRINT"YOU TRY TO KILL YOURSELF!"
5210 FORI=1TO1000:NEXT:RETURN

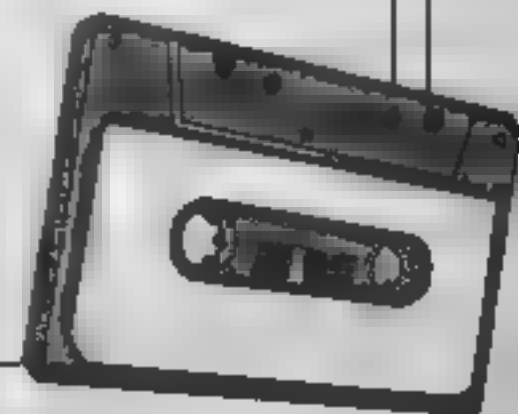
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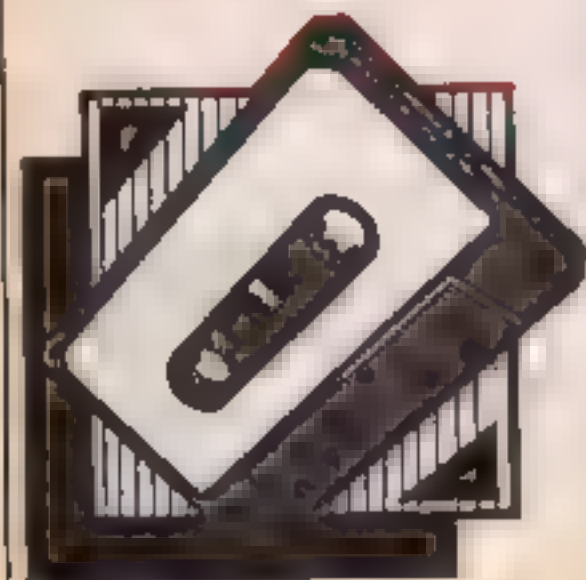

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5220 FORI=1TO5:IF0$(I)="POGO STICK"THENGOTO5250
5230 NEXT:PRINT"YOU HAVE NOTHING TO JUMP WITH"
5240 FORI=1TO1000:NEXT:GOTO180
5250 IFX=3THENPRINT"YOU JUMP THROUGH THE EASTERN DOOR":X=4:GOTO180
5260 PRINT"YOU JUMP AND HIT YOUR HEAD!"
5270 FORI=1TO1000:NEXT:RETURN
5280 FORI=1TO5:IF0$(I)="CHEESE"THENGOTO5300
5290 NEXT:PRINT"YOU HAVE NO FOOD!":FORI=1TO1000:NEXT:GOTO180
5300 PRINT"■YOU EAT THE CHEESE,ITS POISONED!"
5310 GOTO6000
5320 PRINT"■YOU CAN'T OPEN THAT!":FORI=1TO1000:NEXT:GOTO180
5330 IFX<>2ANDX<>7THENPRINT"THE DOORS ARE ALL OPEN"
5340 IFX=2ANDX<>7THENPRINT"THE DOOR IS LOCKED":GOTO5360
5350 IFX=7ANDX<>7THENPRINT"SORRY THE DOORS LOCKED":GOTO5360
5355 PRINT"■THE DOOR IS OPEN!"
5360 FORI=1TO1000:NEXT:GOTO180
5370 IFX<>2ANDX<>7THENPRINT"THE DOORS ARE ALL OPEN":FORI=1TO1000:NEXT:GOTO180
5375 FORI=1TO5:IF0$(I)="BLUE KEY"THEN5380
5376 NEXT:GOTO5385
5380 IFX=2ANDX<>7THENPRINT"■YOU UNLOCK THE DOOR":E(2)=3
5385 FORI=1TO5:IF0$(I)="RED KEY"THEN5390
5386 NEXT:GOTO5400
5390 IFX=7ANDX<>7THENPRINT"■YOU UNLOCK THE DOOR":N(7)=2
5395 FORI=1TO1000:NEXT:RETURN
5400 PRINT"■YOU HAVE NO KEY":FORI=1TO1000:NEXT:GOTO180
6000 PRINT"■YOU ARE DEAD YOU FAILED YOUR MISSION"
6050 PRINT"■-----PRESS ANY KEY TO RE-RUN-----"
6060 POKE198,0:WAIT198,1:POKE198,0
6070 RUN
7000 FORI=1TO5:FORT=1TO15:POKE53230,T:NEXTT,1
7020 POKE53230,E:PRINT"■YOU HAVE COMPLETED THE ADVENTURE.."
7030 PRINT"■YOU CAN GO HOME AND WAIT FOR MISSION"
7040 PRINT"■MICRO TO BE WRITTEN.THE FOLLOW UP TO"
7050 PRINT"■THIS (IF ITS PUBLISHED!!!).. "
7050 GOTO6050
7298 END
10000 DATA"AN AMUSEMENT ARCADE WITH BROKEN MACHINES",0,0,0,2
10010 DATA"A SOFTWARE STORE ROOM CONTAINING PIRATE TAPES",0,7,1,-2
10020 DATA"THE TORTUPE CHAMBER.",0,0,2,4
10030 DATA"THE HALLWAY TO THE PYRAMID.THE WALLS ARE DAMP.",0,3,3,0
10050 DATA"THE VALLY.THERE IS POND WITH FISH IN IT.",0,10,0,0
10060 DATA"A BEACH HUT AT BLACKPOOL.",0,11,0,7
10070 DATA"A MOTEL ON SOME CROSSROADS",-1,12,6,6
10080 DATA"THE HCW OFFICES.IT IS COLD AND MYSTERIOUS",0,13,7,0
10090 DATA"THE PYRAMID.THERE AFE RATHER LARGE DROPPINGS ON THE FLOOR",4,0,0,0
10100 DATA"A HUT BY A ROAD LEADING NORTH AND SOUTH",5,15,0,0
10110 DATA"THE ZOMBIE ROOM.BOLBOUS EYES STARE AT YOU",0,0,0,0
10120 DATA"BRAMMALL LAKE,HONE OF SUFC.",7,0,11,0
10130 DATA"THE COMPUTER ROOM.COMPUTERS LIE ON THE FLOOR.",8,0,0,14
10140 DATA"THE EDITORS HOUSE.IT IS WEIRD AND SCARY",0,0,13,15
10150 DATA"THE MIDDLE OF A ROAD.LAZERS POINT AT YOU.",10,0,14,0
10160 DATA"CHEESE","SWORD"
10170 DATA"NOTHING","FOOTBALL","POGO STICK"
10180 DATA"MIRROR","GLUE","MAINFRAME","MAG TAPE","GRASS"
10190 DATA"BLOOD","BLUE KEY"
10200 DATA"RED KEY","OLD HCW MAGS","GREMLIN"
10210 DATA"GO","INV","HELP","JUMP","KILL"
10220 DATA"QUIT","SWIM"
10230 DATA"EAT","GET","DROP"
10240 DATA"OPEN","UNLOCK","RUN"
10250 DATA"WAIT"

```



GRAPHICS ON THE AMSTRAD CPC464



Phil Taylor introduces his program for multicoloured graphics on the CPC464

Many owners of this fine new machine will no doubt be very impressed with the wide range of pre-defined graphic symbols already programmed into the computer's memory. These are far more extensive than the Teletext type ones to be found on other micros. However, there will obviously be times when a shape is required for which there is no CHR\$, and the SYMBOL command allows for this. The user first grabs whatever graphics characters he will need, so that SYMBOL AFTER 225 will free CHR\$(226) to CHR\$(255) to be re-defined. In fact, all the positions from 0 to 255 can be used, allowing for a totally new print face, or whatever.

The method of defining such a character should be well-known to all, and is detailed on page 46 of Chapter 8 in the users' manual. Although hex numbers are used in the example, I still prefer to work in binary, and this is allowed for. Each column is then worth 1, 2, 4, 8, 16 etc. and the total can be written in denary numbers.

The problem arises, sooner or later, of a shape which will fill more than one matrix, and this is dealt with in this article. The main purpose, however, is to show how colours might be 'overlaid' so that a multicoloured character might be built up. I previously owned a Spectrum, where this was impossible, and then an Electron, on which the VDU 5 command joined the text and graphics cursors and allowed these figures to be built up.

The problem is best imagined by thinking of the character being drawn in one colour, on a piece of paper of another colour. If several such sheets are put one upon the other, only your final picture will show, because of the actual pieces of paper. To continue the analogy, what is needed is a way of drawing the later pictures on sheets of clear plastic, rather

than on paper. Exactly this technique can be achieved on the Amstrad by using the CHR\$(22) command. When followed by CHR\$(1), as in line 140, this turns on a transparent mode, which can be cancelled by PRINTING CHR\$(22)+CHR\$(0)

In order to make the listing shorter to type in, and to enable line copying during the typing in process, I have made

extensive use of the other, less well-known CHR\$ commands. These are explained during the notes on the program. I have included three fairly straightforward screens to enable the reader to understand the process more readily. I claim no prizes for their brilliance, but I feel they do show the possibilities. Screen 1 uses a 3 x 3 grid, with the CHR\$ being defined as follows:

201 black 202 pink 203 orange 204 blue	205 black 206 pink 207 orange 208 blue	209 black 210 pink 211 orange 212 blue
213 black 214 pink 215 blue	216 pink 217 blue 218 purple	219 black 220 pink 221 blue
222 black 223 pink	224 black 225 pink 226 red 227 white	228 black 229 pink

Fig. 1.

Thus a total of 29 SYMBOL commands must be written out. These can then be put together in a fairly straightforward manner

How it works

10-70 REM statements to title the program
80 GOSUB 330, it is obviously necessary to define the characters before we can print them to the screen
90 selects MODE 0, allowing up to 16 colour
100 clears the screen to a background colour
110, 300 uses a loop to print the picture across the screen
120, 290 similarly print across screen. Note that the loop must be completely nested inside the first one
130-270 contain the actual printing instructions. These contain a few CHR\$ commands, explained here:

CHR\$(31) + CHR\$(x) + CHR\$(y) is equivalent to LOCATE x,y

CHR\$(15) + CHR\$(n) is equivalent to PEN n

CHR\$(223), CHR\$(224), CHR\$(225) would merely print these three characters directly one after the other with no gaps

Lastly, you will notice that I reprogrammed the same characters over and over again. There is no reason why this should not be done, but you might prefer to allow separate ranges for each, so that all your characters are available simultaneously

I hope you can now experiment with some degree of confidence with multicoloured graphics. There is no limit to what a little imagination will do!

```

10 REM*****
20 REM***** multicoloured graphics ****
30 REM*****
40 REM***** by Phil Taylor 1985 *****
50 REM*****
60 REM***** for AMSTRAD CPC464 *****
70 REM*****
    
```

AMSTRAD

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80 REM*****
90 REM***** FIRST PROGRAM *****
100 REM*****
110 GOSUB 360:REM ** first set of figures
120 MODE 0
130 PAPER 4:CLS
140 FOR y=1 TO 22 STEP 4
150 FOR x=1 TO 20 STEP 4
160 PRINT CHR$(31)+CHR$(x)+CHR$(y)+CHR$(15)+CHR$(5)
) +CHR$(201)+CHR$(205)+CHR$(209)
170 PRINT CHR$(31)+CHR$(x)+CHR$(y)+CHR$(15)+CHR$(1)
) +CHR$(22)+CHR$(1)+CHR$(202)+CHR$(206)+CHR$(210)
180 INK 14,15
190 PRINT CHR$(31)+CHR$(x)+CHR$(y)+CHR$(15)+CHR$(1)
) +CHR$(203)+CHR$(207)+CHR$(211)
200 PRINT CHR$(31)+CHR$(x)+CHR$(y+1)+CHR$(15)+CHR$(5)
) +CHR$(213)+CHR$(32)+CHR$(219)
210 PRINT CHR$(31)+CHR$(x)+CHR$(y+1)+CHR$(15)+CHR$(1)
) +CHR$(214)+CHR$(216)+CHR$(220)
220 PRINT CHR$(31)+CHR$(x)+CHR$(y+1)+CHR$(15)+CHR$(8)
) +CHR$(215)+CHR$(217)+CHR$(221)
230 PRINT CHR$(31)+CHR$(x+1)+CHR$(y+1)+CHR$(15)+CHR$(7)
) +CHR$(218)
240 PRINT CHR$(31)+CHR$(x)+CHR$(y+2)+CHR$(15)+CHR$(5)
) +CHR$(222)+CHR$(224)+CHR$(228)
250 PRINT CHR$(31)+CHR$(x)+CHR$(y+2)+CHR$(15)+CHR$(11)
) +CHR$(223)+CHR$(225)+CHR$(229)
260 INK 15,3
270 PRINT CHR$(31)+CHR$(x+1)+CHR$(y+2)+CHR$(15)+CHR$(15)
) +CHR$(226)
280 PRINT CHR$(31)+CHR$(11)+CHR$(12)+CHR$(15)+CHR$(4)
) +CHR$(22)+CHR$(1)+CHR$(227)
290 LOCATE 11,12
300 PRINT CHR$(227)
310 PRINT CHR$(22)+CHR$(0)
320 NEXT x
330 NEXT y
340 GOTO 700
350 END
360 SYMBOL AFTER 200
370 SYMBOL 201,31,63,127,224,192,192,192,192
380 SYMBOL 202,0,0,0,31,56,55,62,60
390 SYMBOL 203,0,0,0,0,7,8,0,0
400 SYMBOL 204,0,0,0,0,0,0,1,2
410 SYMBOL 205,255,255,255,0,0,0,0,128
420 SYMBOL 206,0,0,0,255,63,207,63,63
430 SYMBOL 207,0,0,0,0,192,48,0,0
440 SYMBOL 208,0,0,0,0,0,0,192,64
450 SYMBOL 209,252,254,255,1,1,1,1,49
460 SYMBOL 210,0,0,0,254,194,60,206,134
470 SYMBOL 211,0,0,0,0,60,194,0,0
480 SYMBOL 212,0,0,0,0,0,0,48,72
490 SYMBOL 213,192,192,128,128,128,128,128,128
500 SYMBOL 214,62,63,127,127,127,127,127,127
510 SYMBOL 215,1,0,0,0,0,0,0,0
520 SYMBOL 216,63,255,243,243,225,237,255,255
530 SYMBOL 217,192,0,0,0,0,0,0,0
540 SYMBOL 218,0,0,12,12,30,18,0,0
550 SYMBOL 219,1,1,1,1,1,1,1,1
560 SYMBOL 220,206,254,254,254,254,254,254,254
570 SYMBOL 221,48,0,0,0,0,0,0,0
580 SYMBOL 222,96,48,24,15,7,3,1,0

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590 SYMBOL 223,31,15,7,0,0,0,0,0
600 SYMBOL 224,0,0,0,0,0,255,255,0
610 SYMBOL 225,0,0,129,255,255,0,0,0
620 SYMBOL 226,255,129,255,0,0,0,0,0
630 SYMBOL 227,0,126,0,0,0,0,0,0
640 SYMBOL 228,6,12,24,240,224,192,128,0
650 SYMBOL 229,248,240,224,0,0,0,0,0
660 RETURN
670 REM*****
680 REM***** SECOND PROGRAM *****
690 REM*****
700 GOSUB 940:REM ** second set of figures
710 PAPER 8:CLS
720 FOR y=1 TO 22 STEP 4
730 FOR x=1 TO 20 STEP 4
740 PRINT CHR$(31)+CHR$(x)+CHR$(y)+CHR$(15)+CHR$(5)
) +CHR$(201)+CHR$(205)+CHR$(207)
750 PRINT CHR$(31)+CHR$(x)+CHR$(y)+CHR$(15)+CHR$(1)
) +CHR$(22)+CHR$(1)+CHR$(202)+CHR$(206)+CHR$(208)
760 INK 14,15
770 PRINT CHR$(31)+CHR$(x)+CHR$(y)+CHR$(15)+CHR$(1)
) +CHR$(203)+CHR$(32)+CHR$(209)
780 PRINT CHR$(31)+CHR$(x)+CHR$(y)+CHR$(15)+CHR$(6)
) +CHR$(204)
790 PRINT CHR$(31)+CHR$(x+2)+CHR$(y)+CHR$(15)+CHR$(12)
) +CHR$(210)
800 PRINT CHR$(31)+CHR$(x)+CHR$(y+1)+CHR$(15)+CHR$(5)
) +CHR$(211)+CHR$(216)+CHR$(217)
810 PRINT CHR$(31)+CHR$(x)+CHR$(y+1)+CHR$(15)+CHR$(14)
) +CHR$(212)+CHR$(32)+CHR$(220)
820 PRINT CHR$(31)+CHR$(x)+CHR$(y+1)+CHR$(15)+CHR$(6)
) +CHR$(213)
830 PRINT CHR$(31)+CHR$(x)+CHR$(y+1)+CHR$(15)+CHR$(1)
) +CHR$(214)+CHR$(215)+CHR$(218)
840 PRINT CHR$(31)+CHR$(x+2)+CHR$(y+1)+CHR$(15)+CHR$(12)
) +CHR$(219)
850 PRINT CHR$(31)+CHR$(x)+CHR$(y+2)+CHR$(15)+CHR$(5)
) +CHR$(221)+CHR$(226)+CHR$(230)
860 PRINT CHR$(31)+CHR$(x)+CHR$(y+2)+CHR$(15)+CHR$(1)
) +CHR$(222)+CHR$(227)+CHR$(228)
870 PRINT CHR$(31)+CHR$(x)+CHR$(y+2)+CHR$(15)+CHR$(14)
) +CHR$(223)+CHR$(32)+CHR$(229)
880 PRINT CHR$(31)+CHR$(x)+CHR$(y+2)+CHR$(15)+CHR$(4)
) +CHR$(224)
890 PRINT CHR$(31)+CHR$(x+1)+CHR$(y+2)+CHR$(15)+CHR$(3)
) +CHR$(225)+CHR$(22)+CHR$(0)
900 NEXT x
910 NEXT y
920 GOTO 1290
930 END
940 SYMBOL AFTER 200
950 SYMBOL 201,15,31,63,127,255,0,132,132
960 SYMBOL 202,0,0,0,0,0,255,3,3
970 SYMBOL 203,0,0,0,0,0,0,120,72
980 SYMBOL 204,0,0,0,0,0,0,0,48
990 SYMBOL 205,255,255,255,255,255,0,17,17
1000 SYMBOL 206,0,0,0,0,0,255,238,238
1010 SYMBOL 207,240,248,252,254,255,0,2,2
1020 SYMBOL 208,0,0,0,0,0,255,1,1
1030 SYMBOL 209,0,0,0,0,0,0,252,164
1040 SYMBOL 210,0,0,0,0,0,0,0,88
1050 SYMBOL 211,132,132,132,252,0,0,31,0

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1060 SYMBOL 212,120,72,120,0,0,0,0,0
1070 SYMBOL 213,0,48,0,0,0,0,0,0
1080 SYMBOL 214,3,3,3,3,255,255,224,255
1090 SYMBOL 215,238,130,186,186,239,239,239,239
1100 SYMBOL 216,17,125,69,69,16,16,16,16
1110 SYMBOL 217,2,2,2,254,0,0,248,0
1120 SYMBOL 218,1,1,1,1,255,255,7,255
1130 SYMBOL 219,0,88,0,0,0,0,0,0
1140 SYMBOL 220,252,164,252,0,0,0,0,0
1150 SYMBOL 221,0,130,130,130,130,130,254,0
1160 SYMBOL 222,255,1,1,1,1,1,1,255
1170 SYMBOL 223,0,124,84,124,84,124,0,0
1180 SYMBOL 224,0,0,40,0,40,0,0,0
1190 SYMBOL 225,0,62,62,58,62,38,62,62
1200 SYMBOL 226,255,0,0,4,0,24,0,0
1210 SYMBOL 227,193,193,193,193,193,193,193,193
1220 SYMBOL 228,255,128,128,128,128,128,128,255
1230 SYMBOL 229,0,62,42,62,42,62,0,0
1240 SYMBOL 230,0,65,65,65,65,65,127,0
1250 RETURN
1260 REM*****
1270 REM***** THIRD PROGRAM *****
1280 REM*****
1290 BOSUB 1490 :REM ** third set of figures
1300 PAPER 13:CLS
1310 FOR y=1 TO 22 STEP 4
1320 FOR x=1 TO 20 STEP 3
1330 INK 1,24
1340 PRINT CHR$(31)+CHR$(x)+CHR$(y)+CHR$(15)+CHR$(
1)+CHR$(201)+CHR$(205)
1350 PRINT CHR$(31)+CHR$(x)+CHR$(y)+CHR$(15)+CHR$(
6)+CHR$(22)+CHR$(1)+CHR$(202)+CHR$(206)
1360 PRINT CHR$(31)+CHR$(x)+CHR$(y)+CHR$(15)+CHR$(
7)+CHR$(204)+CHR$(208)
1370 INK 1,15
1380 PRINT CHR$(31)+CHR$(x)+CHR$(y)+CHR$(15)+CHR$(
1)+CHR$(203)+CHR$(207)
1390 PRINT CHR$(31)+CHR$(x)+CHR$(y+1)+CHR$(15)+CHR
$(1)+CHR$(209)+CHR$(213)

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1400 PRINT CHR$(31)+CHR$(x)+CHR$(y+1)+CHR$(15)+CHR
$(3)+CHR$(210)+CHR$(214)
1410 PRINT CHR$(31)+CHR$(x)+CHR$(y+1)+CHR$(15)+CHR
$(6)+CHR$(211)+CHR$(215)
1420 PRINT CHR$(31)+CHR$(x)+CHR$(y+1)+CHR$(15)+CHR
$(7)+CHR$(212)+CHR$(216)
1430 PRINT CHR$(31)+CHR$(x)+CHR$(y+2)+CHR$(15)+CHR
$(1)+CHR$(217)+CHR$(221)
1440 PRINT CHR$(31)+CHR$(x)+CHR$(y+2)+CHR$(15)+CHR
$(5)+CHR$(218)+CHR$(222)
1450 PRINT CHR$(31)+CHR$(x)+CHR$(y+2)+CHR$(15)+CHR
$(14)+CHR$(219)+CHR$(220)+CHR$(22)+CHR$(0)
1460 NEXT x
1470 NEXT y
1480 RUN
1490 SYMBOL AFTER 200
1500 SYMBOL 201,0,1,2,5,10,21,16,16
1510 SYMBOL 202,0,0,1,2,5,10,0,0
1520 SYMBOL 203,0,0,0,0,0,0,10,5
1530 SYMBOL 204,0,0,0,0,0,0,5,10
1540 SYMBOL 205,128,192,160,80,168,84,4,4
1550 SYMBOL 206,0,0,64,160,80,168,0,0
1560 SYMBOL 207,0,0,0,0,0,0,168,80
1570 SYMBOL 208,0,0,0,0,0,0,80,168
1580 SYMBOL 209,31,16,31,16,31,16,31,16
1590 SYMBOL 210,0,15,0,15,0,15,0,0
1600 SYMBOL 211,0,0,0,0,0,0,0,5
1610 SYMBOL 212,0,0,0,0,0,0,0,10
1620 SYMBOL 213,252,4,252,4,252,4,252,4
1630 SYMBOL 214,0,248,0,248,0,248,0,0
1640 SYMBOL 215,0,0,0,0,0,0,0,80
1650 SYMBOL 216,0,0,0,0,0,0,0,168
1660 SYMBOL 217,31,24,24,0,0,0,0,0
1670 SYMBOL 218,0,0,0,60,60,126,0,0
1680 SYMBOL 219,0,0,0,0,0,0,126,126
1690 SYMBOL 220,0,0,0,0,0,0,63,63
1700 SYMBOL 221,252,12,12,0,0,0,0,0
1710 SYMBOL 222,0,0,0,30,30,63,0,0
1720 RETURN

```



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Here's the third part of Clive Gifford's series on Amstrad CPC464 noise capabilities

SOUND MOVES

Now that the envelope commands have been covered, there is one final area I would like to mention and that is your Amstrad's ability to generate white noise.

White noise is the basis of all the explosions, gunshots and drumbeats you hear on your Amstrad. White noise allows a whole new range of sounds to be created, sounds which don't have a musical note for their basis.

How do you obtain the noise channel? Firstly, you must switch off the pitch parameter of the sound statement, then by adding a number between 1 and 15 as the seventh number on your SOUND statement, you choose one of the different types of white noise available.

Putting a number of the different noises in a loop to be played one after another creates an interesting effect. If you play them in reverse order (from 15 to 1) with a duration of a half or a third of a second, you get quite a good imitation of the sea breaking on the shore.

The noise channel can be used on its own, as suggested above, but it can be and often is more effective when used in conjunction with one of the sound envelopes. Below are two different effects found when white noise is shaped by an envelope.

```
10 ENV 1,100,4,0
20 ENT 1,20,-15,40
30 SOUND 1,0,000,1,1,1,1
```

```
10 ENV 1,20,4,2
20 SOUND 1,700,100,1,1,0,5
30 GOTO 20
```

The mini-synthesiser demonstrates a number of the features we have discussed over the three articles. The top row of keys, excluding the ESC key, all play a different note. The KEY DEF commands in line 290 allow the keys on the right of the top row (DEL, CLR etc) to be used. On pressing the ESC key twice, the computer resets these keys to their original values.

The 14 keys play the basic notes of the middle and the upper first octave. The data in line 280 corresponds to the Amstrad manual's music octaves and this information is stored in the array M(X). You must select the sound you require from the choice of Piano, Peow (rather like

```
REM *****
REM MINI-SYNTH
30 REM *****
40 GOSUB 190:GOSUB 260
50 ON BREAK GOSUB 370
ON ERROR GOTO 370
70 A$=INKEY$:IF A$="" THEN 70
80 N=ASC(A$)-48
90 IF N<1 OR N>14 THEN GOSUB 210
100 IF N=33 THEN V=1:T=0:PAPER #1,1:CLS #1
110 IF N=39 THEN V=2:T=1:PAPER #2,1:CLS #1
120 IF N=21 THEN V=0:T=0:P=15:PAPER #3,1:CLS #3
130 IF N=34 THEN V=3:T=2:PAPER #4,1:CLS #1
140 IF N<1 OR N>14 THEN 70
150 SOUND 1,M(N),30,P,V,T
160 SOUND 2,M(N),30,P,V,T
170 SOUND 4,M(N),30,P,V,T
180 GOTO 70
190 REM SCREEN DISPLAY
200 CLS:PEN 2:DIM E$(4):LOCATE 10,2:PRINT "M I N I - S Y N T H":LOCATE 10,2:PEN 1:PRINT CHR$(22);
210 WINDOW #1,1,9,8,16:WINDOW #2,11,19,8,16:WINDOW #3,21,29,8,16:WINDOW #4,31,39,8,16
220 RESTORE 230:FOR T=1 TO 4:PAPER #T,3:PEN #T,2:CLS #T:READ E$(T):PRINT #T,STRING$(35," ");E$(T):NEXT T
230 DATA "PIANO","PEEOW","ORGAN","SPACE"
240 INK 1,6,0
250 RETURN
260 REM INITIALISATION
270 DIM M(14):FOR T=1 TO 14:READ M(T):NEXT T
280 DATA 478,426,379,358,319,284,253,239,213,190,179,159,142,127
290 KEY DEF 32,1,58:KEY DEF 25,1,59:KEY DEF 24,1,60:KEY DEF 16,1,61:KEY DEF 79,1,62
300 ENV 1,15,-1,3
310 ENV 2,15,1,3
320 ENV 3,1,15,30
330 ENV 4,-1,15,3,3,3,-5,1
340 ENT -2,5,5,1,5,-5,1
350 RETURN
360 REM
370 REM END
380 KEY DEF 79,1,127:KEY DEF 16,1,16:KEY DEF 24,1,94:KEY DEF 25,1,45:KEY DEF 32,1,48:PEN 2:END
```

synthesised drums), Organ (the basic, unaltered sound of the Amstrad's sound generator) and Space. Use 'Q', 'W', 'E' and 'R' to select your sound and then play away!

As a sound key is pressed, a tone and/or volume envelope is selected. From looking at lines 100 to 130 and lines 300 to 340, you can see which envelope causes which effect and naturally, these envelopes can be taken from the program and used in your own programs.

Lines 150 to 170 play the note

which lasts for just under one-third of a second. I first tried to keep the duration far shorter, to maintain more control over the sounds and the speed they are played, but I soon found that the quality of the envelopes deteriorated when adjusted to smaller durations. The end result is a compromise which produces some reasonable effects.

The rest of the program is concerned with collecting your input and with providing the screen display.

AMSTRAD CPC464 ADVENTURE

DUNGEONS OF STORMWRATH

Trapped in the dungeons of Castle Stormwrath you must escape and steal the baron's magic powers.
By Clive Gifford

As thunder claps and lightning splits the sky in two, the formidable form of Castle Stormwrath clearly commands the horizon. The home of the Baron is not a friendly place, as you have found out, spending the winter in a dungeon, deep within the castle's heart.

You are a humble peasant with a simple mission to wrest control of your homelands from the baron. To do this you must locate the source of the baron's magical. Steal this source and escape from the Castle, body and sanity intact.

This adventure uses the now standard verb noun format with only the first three letters of each command and object necessary. It should take you many hours to complete.

Commands Available

GET	NORTH	EMPTY
TAKE	SOUTH	LIST
PICKUP	EAST	
		INVENTORY
DROP	WEST	LIGHT
LEAVE	UP	OPEN
SCORE	DOWN	SCORE
FIGHT	KILL	HIT
POLISH	RUB	CLEAN
QUIT	DRINK	EXAMINE
EAT		

Objects available

KNIFE	LAMP	FULL BOTTLE
KEY	DOOR	CHEST
BOOK	VASE	CUSHION
EMPTY BOTTLE		
	APPLE	SNAKE
TROLL	GENIE	BARON
HOLLOW PANEL		GUARDS

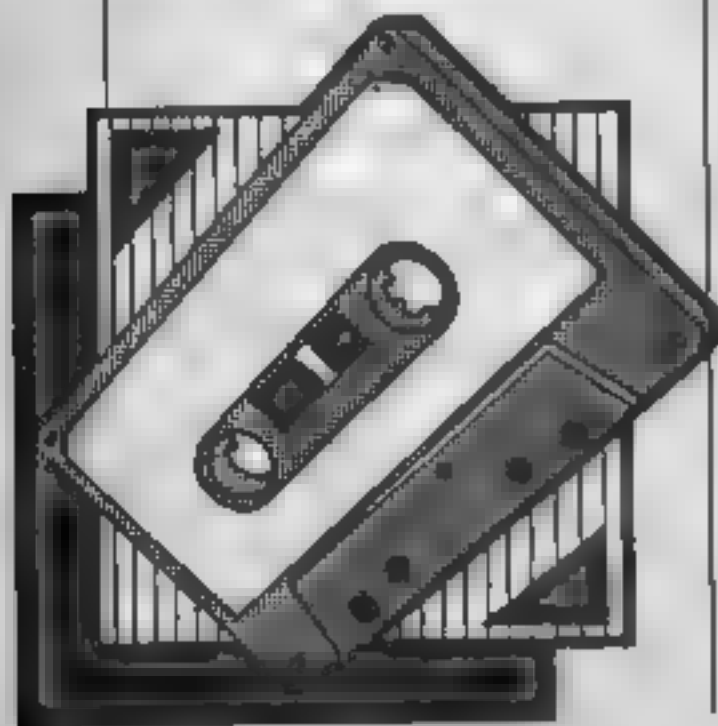
```

10 REM *****
20 REM CASTLE STORMWRATH
30 REM *****
40 REM
50 MODE 0:LOCATE 5,12:PRINT "PLEASE WAIT
.-":GOSUB 1140
60 PP=P:CLS:PEN 1:BORDER INT(RND*27):M=M
+L:IF M>600 THEN INK 1,24,1:LOCATE 6,10:
PRINT "YOUR STRENGTH HAS FAILED YOU":GOT
0 1050
70 PRINT:PRINT STRING$(40,"*")
80 PRINT "You are ";L$(P):IF L=1 THEN PR
INT:PRINT:PRINT:GOTO 140
90 PRINT:PRINT "You can see ";
100 FOR T=1 TO 17:IF O(T,1)=P THEN PRINT
TAB(13);O$(T)
110 NEXT
120 PRINT:PRINT:PRINT "Visible Exits are
I";:FOR T=1 TO 6:IF L(P,T)>0 THEN PRINT
MID$(K$(T+3)-2,3);"-";
130 NEXT
140 IF O(8,1)=0 AND O(9,1)=0 AND P=23 AN
D O(15,1)<>23 THEN PRINT "You hear cheer
ing noises":GOTO 1100
150 IF Q>-1 AND DV<>1 AND O(8,1)=0 THEN
Q=Q-1
160 IF DV<>1 AND Q=-1 AND O(8,1)=0 THEN
PRINT "The vase slips from your grasp an
d hits the floor...SMASH":SOUND 1,32,100
,15:O(8,1)=999
170 IF O(13,1)=P OR O(12,1)=P OR O(15,1)
=P THEN PRINT "You cannot move, the crea
ture is about to attack":FOR Y=1 TO 7:A
(P,Y)=L(P,Y):L(P,Y)=0:NEXT
180 IF O(17,1)=P AND L<>1 AND O(17,2)=-2
THEN PRINT "The Guards see you and atta
ck, all exits are sealed, you must fight"
:FOR T=1 TO 7:A(P,T)=L(P,T):L(P,T)=0:NEX
T
190 IF P=28 OR P=24 THEN 1050
200 PRINT:PRINT:LINE INPUT "What Next? "
;A$:A$=UPPER$(A$):IF LEFT$(A$,2)="UP" AN
D L(P,5)>0 THEN P=L(P,5) ELSE IF LEFT$(A
$,3)="DOW" AND L(P,6)>0 THEN P=L(P,6) EL
SE IF LEFT$(A$,2)="UP" AND P=L(P,5)<1 TH
EN 250
210 IF LEFT$(A$,3)="NOR" AND L(P,1)>0 TH
EN P=L(P,1) ELSE IF LEFT$(A$,3)="SOU" AN
D L(P,2)>0 THEN P=L(P,2) ELSE IF LEFT$(A
$,3)="EAS" AND L(P,3)>0 THEN P=L(P,3) EL
SE IF LEFT$(A$,4)="WES" AND L(P,4)>0 TH
EN P=L(P,4)
220 IF PP<>P THEN PRINT "Moving Now...":
GOTO 340
230 IF LEN(A$)<3 THEN PRINT "Too Short":
GOTO 200
240 IF L=1 AND O(17,1)=P THEN PRINT "You
cannot do anything other than move":GOT
0 340
    
```

Variables

LS location names
L(X,Y) location exits
T used in the FOR/NEXT loops
CS shortened form of command compared to player's entry
DS shortened form of object compared to player's entry
KS string used for printing visible exits on-screen
P player's position

V number of verb specified by player
N number of noun specified by player
M number of moves the player has made, on reaching 600 game ends
AS player's complete entry
DV, L simple on/off counters, L is for light, DV concerns status of vase



```

250 IF L=2 AND P=5 AND LEFT$(A$,3)<>"FIG
" AND LEFT$(A$,3)<>"HIT" AND LEFT$(A$,3)
<>"KIL" THEN PRINT "You can only fight":
GOTO 340
260 PRINT: PEN 3: V=0: FOR T=1 TO 21: IF C$(
T)=LEFT$(A$,3) THEN V=T: T=21
270 NEXT: IF V=0 THEN PRINT "You cannot d
o that": GOTO 340
280 IF LEFT$(A$,3)="INV" OR LEFT$(A$,3)=
"LIB" OR LEFT$(A$,3)="SCO" OR LEFT$(A$,3
)="QUI" OR LEFT$(A$,3)="JUM" THEN GOTO 3
30
290 Z=INSTR(A$," "): B$=MID$(A$,Z+1,3)
300 IF V>0 AND Z=0 THEN PRINT "This comm
and must be followed by an      object": G
OTO 340
310 N=0: FOR T=1 TO 18: IF D$(T)=LEFT$(B$,
3) THEN N=T: T=18
320 NEXT: IF N=0 THEN PRINT "No such obje
ct": GOTO 340
330 ON V GOSUB 350,350,1020,430,430,480,
480,510,560,600,600,600,710,760,780,800,
850,890,980,980,980
340 PRINT #1,"PRESS A KEY": WHILE INKEY$=
"": WEND: CLS #1: SOUND 1,100+INT(RND*200):
GOTO 60
350 REM TAKE/GET/PICK UP
360 IF O(N,1)=0 THEN PRINT "Fool, you al
ready have it": RETURN
370 IF O(N,2)=-1 THEN PRINT "You cannot
take that, it's far too large": RETURN
380 IF O(N,2)=-2 THEN PRINT "You cannot
take a creature either alive or dead": RE
TURN
390 IF O(N,1)<>P THEN PRINT "It's not he
re to take": RETURN
400 IF DV=1 AND O(8,1)=P AND O(9,1)=P AN
D N=9 THEN PRINT "The vase is safely car
ried on the velvetcushion": O(8,1)=0: O(9,
1)=0: RETURN
410 IF N=8 AND DV<>1 AND O(9,1)<>P THEN
PRINT "You can only carry the vase for s
everal moves": O(8,1)=0: RETURN
420 O(N,1)=0: O(N,2)=0: PRINT "You have ta
ken the object": RETURN
430 REM DROP/LEAVE
440 IF O(N,1)<>0 THEN PRINT "You don't h
ave the object to drop it": RETURN
450 IF N=8 AND O(9,1)=P THEN PRINT "The
vase safely drops on the cushion, to carr
y them safely, just TAKE CUSHION": DV=1: O
(8,1)=P: RETURN
460 IF N=8 AND O(9,1)<>P THEN PRINT "The
vase smashes as it hits the floor": O(8,
1)=999: RETURN
470 O(N,1)=P: PRINT "You drop the object"
: RETURN
480 REM LIST/INVENTORY
490 CLS: PRINT: PRINT TAB(12); "OBJECTS CAR
RIED": PEN 2: PRINT: PRINT: X=0: FOR T=1 TO 1
6: IF O(T,1)=0 THEN X=X+1: PRINT X;") "; O$(
T)
500 NEXT: RETURN
510 REM EMPTY
520 IF N<>10 THEN PRINT "You cannot empt
y that": RETURN
530 IF O(10,1)<>0 THEN PRINT "You don't
have the bottle, I'm afraid": RETURN
540 IF P<>27 THEN PRINT "The liquid burn
s a small hole in front of you": O(3,1)=

```

```

0: O(10,1)=999: RETURN
550 PRINT "The poison lands in the strea
m and will kill all those at the Castle.
": O(10,1)=999: O(3,1)=0: O$(17)="a pile of
dead GUARDS": O(17,2)=-1: RETURN
560 REM LIGHT
570 IF O(2,1)<>0 OR (N<>2 AND N<>18) THE
N PRINT "You can only light the lamp whi
ch must be with you": RETURN
580 IF N=18 THEN L=1: PRINT "The light is
switched off": RETURN
590 PRINT "The lamp is on, you can see a
ll around you. To switch lamp off, ente
r LIGHT OFF": L=2: RETURN
600 REM FIGHT/KILL/HIT
610 IF LEFT$(A$,3)="HIT" AND N=16 AND P=
22 THEN PRINT "The panel breaks revealin
g a secret      passageway, centuries old
": L(22,3)=9: O$(16)="a smashed panel": RET
URN
620 IF N<>12 AND N<>13 AND N<>15 AND N<>
17 THEN PRINT "You violent person! For t
hat, I'll make you start again": WHILE IN
KEY$="": WEND: RUN
630 IF O(N,1)<>P THEN PRINT "How can you
fight something that isn't here": RETUR
N
640 IF N=17 THEN PRINT "You stood no cha
nce against that many": GOTO 1050
650 IF (N=13 OR N=12 OR N=15) AND O(1,1)
<>0 THEN PRINT "Without any weapon, your
fight was long and arduous": M=M+560: GOT
O 690
660 IF N=12 THEN PRINT "You kill the sna
ke easily": O(12,1)=999: M=M+40: GOTO 690
670 IF N=13 THEN PRINT "You kill the tro
ll after a fierce battle": O(13,1)=999: M=
M+200: GOTO 690
680 IF N=15 THEN PRINT "You only managed
to wound him": M=M+200: O(15,1)=INT(RND*9
)+10: GOTO 690
690 IF N=15 AND O(1,1)<>0 THEN 1050
700 FOR T=1 TO 7: L(P,T)=A(P,T): NEXT: RETU
R
710 REM OPEN
720 IF N<>6 THEN PRINT "You can only ope
n the chest": RETURN
730 IF P<>5 AND N=6 THEN PRINT "There is
no chest here": RETURN
740 IF O(4,1)<>0 THEN PRINT "You are mis
sing something": RETURN
750 PRINT "The chest opens to reveal a V
ase": O(8,1)=5: RETURN
760 REM SCORE
770 PRINT: PRINT "MOVES TAKEN: "; M: RETURN
780 REM QUIT
790 GOTO 1080
800 REM DRINK
810 IF N=3 THEN PRINT "There's nothing t
o drink, it's empty": RETURN
820 IF N<>10 THEN PRINT "You cannot drin
k that!": RETURN
830 IF N=18 AND O(10,1)<>0 AND O(10,1)<>
P THEN PRINT "It's not here to drink": RE
TURN
840 PRINT "You drink the liquid in the b
ottle, you didn't know that it was a str
ong poison": GOTO 1050
850 REM EAT
860 IF N<>11 THEN PRINT "Are you mad? Yo

```

```

u cannot eat that!":RETURN
870 IF O(11,1)<>0 AND O(11,1)<>P THEN PR
INT "It's not here to eat":RETURN
880 O(11,1)=999:PRINT "The apple makes y
ou stronger":M=M-120:RETURN
890 REM EXAMINE
900 IF O(N,1)<>P AND O(N,1)<>0 THEN PRIN
T "The object must be here if you want t
o examine it":RETURN
910 IF N<6 OR N>10 THEN PRINT "There is
little more that can be said":RETURN
920 PRINT "Your examination reveals...":
ON N-5 GOTO 930,940,950,960,970
930 PRINT "a keyhole in the beautifully-
crafted chest":RETURN
940 PRINT "a message on the inside cover
, telling you that you are to be rescue
d from the battlements":RETURN
950 PRINT "the Vase of Destiny, whoever
owns it has supreme magical powers":RETUR
N
960 PRINT "a finely-made velvet cushion
with a depression in its centre":RETUR
N
970 PRINT "a bottle of potent poison, on
a sip will kill":RETURN
980 REM CLEAN/DUST/POLISH
990 IF L(1,3)=2 THEN PRINT "The genie is
too tired to help again":RETURN
1000 IF O(2,1)=0 AND N=2 AND P=1 THEN PR
INT "With a loud explosion and much smok
e the Genie Of The Lamp appears and opens
the door for you":O(14,1)=P:L(1,3)=2:RE
TURN
1010 PRINT "Nothing Happens":RETURN
1020 REM JUMP
1030 IF L(P,7)<1 THEN PRINT "Nothing Hap
pens":RETURN
1040 IF L(P,7)>0 THEN P=L(P,7):PRINT "Yo
u jump...":FOR T=220 TO 80 STEP -20:SOUN
D 1,T,10:NEXT:FOR T=100 TO 240 STEP 20:S
OUND 1,T,10:NEXT:RETURN
1050 REM DEFEAT
1060 FOR T=1 TO 3000:NEXT:CLS:INK 0,6:IN
K 1,0:BORDER 0:PEN 1:LOCATE 1,10:PRINT "
YOU FAILED IN YOUR ATTEMPT TO BEAT
THE DARK FORCES. YOU DIED BRAVELY."
1070 FOR T=80 TO 410 STEP 30:SOUND 1,T:N
EXT:FOR T=1 TO 1000:PRINT:PRINT:PRI
NT
1080 PRINT:PRINT "Do you want to play ag
ain (Y/N)"
1090 A$=INKEY$:IF A$="Y" THEN RUN ELSE I
F A$="N" THEN END ELSE GOTO 1090
1100 REM VICTORY
1110 FOR T=1 TO 2500:NEXT:CLS:PEN 1:LOCA
TE 1,10:PRINT " YOU ARE RESCUED FROM TH
E BATTLEMENTS AND TAKEN BACK TO YOUR
COUNTRY WHERE YOUR LORD GIVES YOU LAN
DS AND TITLES"
1120 FOR T=1 TO 26:BORDER T:INK 1,T:SOUN
D 1,340-(10*T):NEXT:FOR T=1 TO 2000:NE
XT:PRINT:PRINT:END
1130 STOP
1140 REM INITIALISATION
1150 L=1:Z=0:DV=0:P=1:K$="NORSQUEASWESUP
DOW":Q=0
1160 DIM L(30,7),O(20,4),L$(30),O$(20),C
$(30),D$(20),A(30,7)
1170 FOR T=1 TO 30:READ L$(T):IF T>8 AND
T<20 THEN RESTORE 1260

```

```

1180 NEXT:FOR X=1 TO 30:FOR Y=1 TO 7:REA
D L(X,Y):IF L(X,Y)=-1 THEN L(X,Y)=INT(RN
D*9)+9:IF RND>0.6 THEN L(X,Y)=0
1190 NEXT:NEXT
1200 FOR T=1 TO 18:READ O$(T),O(T,1),O(T
,2):NEXT
1210 FOR T=1 TO 21:READ C$(T):NEXT:FOR T
=1 TO 18:READ D$(T):NEXT
1220 MODE 1:INK 1,24:INK 0,1:CLS:WINDOW
#1,15,26,25,25:PEN #1,3:PAPER #1,2
1230 RETURN
1240 DATA "in a dark, Dungeon deep in th
e heart of Castle Stormwrath","
by an enormous staircase carved
in jade"
1250 DATA "in the Great Hallway","in the
State Bedroom","in the Throne Room","in
the Baron's Gardens","in a store room",
"in a kitchen"
1260 DATA "stuck in a maze of twisting a
nd turning tunnels","in the libr
ary","in the Baron's Study","on the Cast
le Battlements","in the Shark-infested o
oat"
1270 DATA "in a forest close to the cast
le","in a clearing in the forest","by a
stream which supplies the castl
e with water","falling down a deep hole
dug to catch wild boar","DEAD!!!
","at the top of the giant Jade
Staircase"
1280 DATA 0,0,-2,0,0,0,0,24,0,1,30,0,0
,5,0,21,0,0,0,0,8,0,5,0,0,0,0,3,30,4,0
,0,0,25,20,23,0,0,0,0
1290 DATA 0,0,0,0,0,0,0,7,4,0,0,0,0,0,-1
,-1,22,10,-1,-1,0,11,9,-1,-1,-1,-1,0,-1
,-1,12,10,-1,-1,0,-1,-1,-1,-1,13,11,0
1300 DATA -1,-1,-1,-1,14,12,0,15,13,-1,-
1,-1,-1,0,-1,-1,-1,-1,14,16,0,15,17,-1,-
1,-1,-1,0,-1,-1,-1,-1,16,18,0,-1,-1,17,1
9,-1,-1,0,-1,-1,18,20,-1,-1,0,19,6,-1,-1
,-1,-1,0
1310 DATA 0,22,0,3,0,0,0,21,0,0,0,0,0,0
,0,16,0,6,0,0,24,0,0,0,0,0,0,28,6,28,0
,0,0,26,0,25,0,0,0,0,27,0,0,0,28,0,0,26,0
,0,0,0,0,0,0,0,0,0,0,0,0,0,5,0,2,0
1320 DATA "a KNIFE",0,0,"an old, dirty L
AMP",0,0,"an empty BOTTLE",999,0,"an anc
ient rusty KEY",27,0,"a solid oak DOOR",
1,-1
1330 DATA "a carved CHEST",5,-1,"a dusty
BOOK",21,0,"a precious VASE",-5,0,"a ve
lvet CUSHION",3,0,"a FULL BOTTLE",7,0
1340 DATA "a golden APPLE",6,0,"a venomo
us SNAKE",26,-2,"a greedy TROLL",7,-2,"a
mysterious GENIE",-1,-1,"the evil BARON
",23,-1
1350 DATA "a hollow PANEL",22,-1,"a troo
p of GUARDS",5,-2,"zzz",999,999
1360 DATA "TAK","GET","JUM","DRO","LEA",
"LIS","INV","EMP","LIO","FIG","KIL","HIT
","OPE","SCO","QUI","DRI","EAT","EXA","C
LE","RUB","POL"
1370 DATA "KNI","LAM","BOT","KEY","DOO",
"CHE","BOO","VAS","CUS","FUL","APP","SNA
","TRO","GEN","BAR","PAN","GUA","OFF"
1380 DATA 9,3,22,10,2,9,11,4,10,12,6,11,
13,6,12,14,2,13,15,5,14,16,1,15,17,5,16,
18,3,17,19,3,18,20,1,19
1390 DATA 9,4,10,10,1,11,11,3,12,12,5,13
,13,5,14,14,1,15,15,6,16,16,2,17,17,6,18
,18,4,19,19,4,20,20,2,6

```


C64

**Compute!s
Third Book of
Commodore 64**

This is a hotch-potch of programs and articles — mostly the former — many of which were originally published in one of the better American computer magazines. It is definitely a book for keen typists, as there are a lot of lengthy listings. The programs include a machine language editor and a proofreader, to make program entry as painless as possible, but you will still have to put in a good many hours at the keyboard if you want to make the most of this selection.

There are some advantages, though, to buying your programs in book form. The price is one obvious one — you get over 20 programs for little more than the price of one cassette. The range of programs offered is another good point, as they include utilities and educational programs as well as the usual games. You also get a lot more background information than the average cassette inlay offers, together with hints and advice on writing your own programs or modifying these to suit your own purposes.

The book is split into five chapters, the first being on BASIC programming — articles, rather than listings — and the others covering recreations and applications, education, sound and graphics, and utilities. The programs include a turtle graphics interpreter, a program designed for the handicapped to allow joystick-controlled programming, Screen 80, which as its name suggests provides an 80-column display, and a paintbox program.

A good buy if you have a taste for obscure programs and a lot of spare time. **M.N.**

Price: £10.95

Publisher: Compute! Publications

Distributor: Holt Saunders, 1 St Anne's Rd, Eastbourne, East Sussex BN21 3UN

C64



C64

**Advanced BASIC and
Machine Code for the
Commodore 64**

This book is mainly an introduction to machine code and assembly language. The first two chapters give some techniques used in BASIC programming while the remaining nine chapters are devoted to machine code.

The first chapter gives examples of how to speed up your BASIC programs and use up less memory. The second chapter describes how to write a database program by giving the various routines involved and describing its function line by line.

The machine code section starts off by giving you an example of how fast machine code is compared to BASIC. It then continues to introduce the 6502 command set and the flags and registers used by the processor. As you continue the various forms of addressing are introduced and explained. Some of the final examples explain how to use 16-bit addition, subtraction, multiplication and division.

Throughout this book you are building up a small simple arcade game step by step. Sections of the program are rewritten to be faster and more memory efficient as you learn of new methods and instructions.

The book gives a listing for a monitor program which includes an assembler/disassembler along with the usual monitor features. There are various memory maps and tables included in the back of the book for reference purposes.

It is obviously well written although the example programs aren't line by line annotated. This is quite a fall-back for a beginner who would really need to see the functions of all the commands in detail. **K.I.**

Price: £6.95

Publisher: Duckworth

Address: The Old Piano Factory, 43 Gloucester Cres, London NW1

C64



AMSTRAD

**Machine Code for
Beginners on the
Amstrad**

A number of the "Golden Wonder Book of Machine Code for Complete Idiots and Lame Brains on the Black and Decker Home Computer" books are absolutely awful. In fact, I haven't seen a really good one yet. Machine code freaks don't seem to be very good with words.

On then to Steve Kramer's offering. Will it do the trick? Yes... and no has to be the answer here! It certainly does take you from the very beginning, getting you to enter a very simple example in the first few pages. The style, however, varies from some rather convoluted explanations to the "there... that wasn't very difficult was it?" type of remark.

It's clear that Steve has tried hard to make it easy without missing anything out, but on occasions even his explanations are heavy going. The trouble is that the subject matter is so darned abstract that even with the copious diagrams and assembler listings it's very hard work. To give him his due though, he hasn't just taken a stock Z80 programming tome and torted it up for the CPC464, this book is pretty machine specific.

In order to make the best use of this I feel you will need to buy an Assembler/Monitor program, Amsoft's is £24.95, making a big financial commitment to your learning. I can't really advise you to make a start unless your BASIC programming is of a very high order, and you have the ability to understand the standard manual from cover to cover. **D.M.**

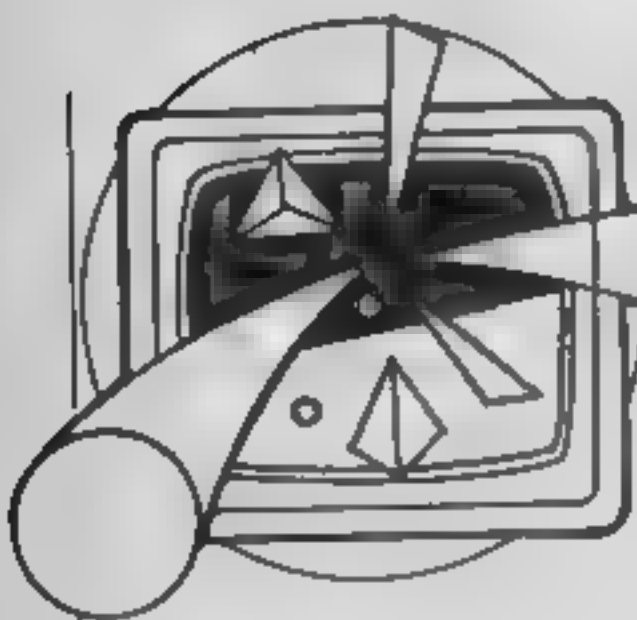
Price: £6.95

Publisher: Micro Press

Address: Castle Hse, 27 London Rd, Tunbridge Wells, Kent

AMSTRAD





GRAPHICS PACKAGES

Shingo Suglura gives you the low-down on graphics packages currently available for the

MSX

Whether you're interested in serious CAD or in drawing pretty pictures, computer graphics is one of the most fascinating aspects of computing. The Beeb has great potential in this area. The fully bit-mapped screens means that detailed pictures may be built up. If you're interested in CAD, you can buy the excellent Bitstack System but if you simply want to show off your artistic talents and doodle, there is a wide range of drawing packages. The quality ranges from excellent to useless. In this article, I have looked at a variety of packages.

Drawing package — Bug-Byte

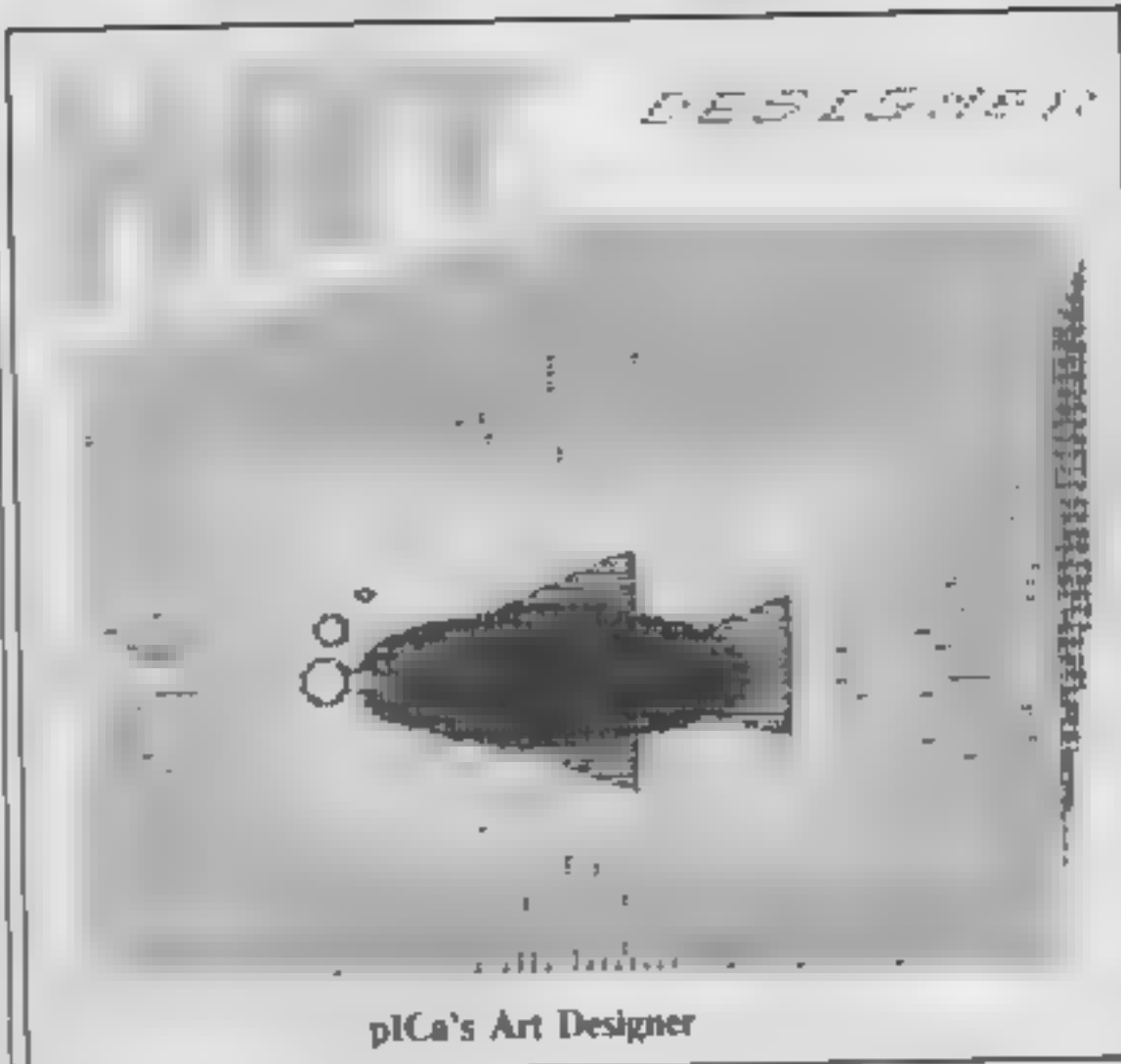
With this package, you are limited to MODE 2 (a mode which seems to be favoured by most packages even though the resolution is low)

When the program is first entered there are two modes — draw mode and "move" mode. In draw mode, a line is drawn as you move the cursor and in move mode, the cursor may be moved without disturbing the background. I was surprised to find that there was no rubber-banding facility to complement the draw mode, which in itself is a very cumbersome method for drawing detailed shapes.

There are the usual facilities to draw triangles, rectangles, circles and ellipses. Unfortunately, the positioning of these objects was very cumbersome and accurate positioning was impossible.

One facility which I liked about this package was its fill facility. Since the program is written in machine code, the fill was quick and choosing the fill colour (including shades) was reasonably easy.

All the instructions for this rather simple package was on a small inlay card. Needless to say, it was not very comprehensive and I don't recommend this package very highly.



pICa's Art Designer

Art designer — pICa

In this package, you are limited to MODE 2. There are the usual facilities to plot points, draw lines, draw circles and ellipses, draw rectangles. However, an inexcusable omission is the lack of rubber-banding facility. Without this, there is no chance of you seeing the line before you actually fix it. Another surprising omission is the lack of a flood fill facility. There are some very strange facilities, the most curious of which is a facility to print a kestrel at the current cursor position, somewhat gimmicky.

To make matters worse, the whole package is badly designed. For example, if you go back to the main menu, your picture is lost! Also, most of the options are chosen by pressing a combination of CTRL and key. Why not use function keys or even icons?

This package also includes a character designer, the sort of program you would type in from magazines. There is no facility to define multi-coloured characters or facility to save the character in the form of BASIC lines.

As you might have guessed by now, this drawing package is rather limited.

Artist — Pagan

Drawing is limited to MODE 2, but this particular drawing package is characterised by its extensive use of little pics to show the various options. These are constantly available on both sides of the screen. Although this limits the size of your picture, it is very user-friendly.

All the usual features are here — like plotting points, rubber-

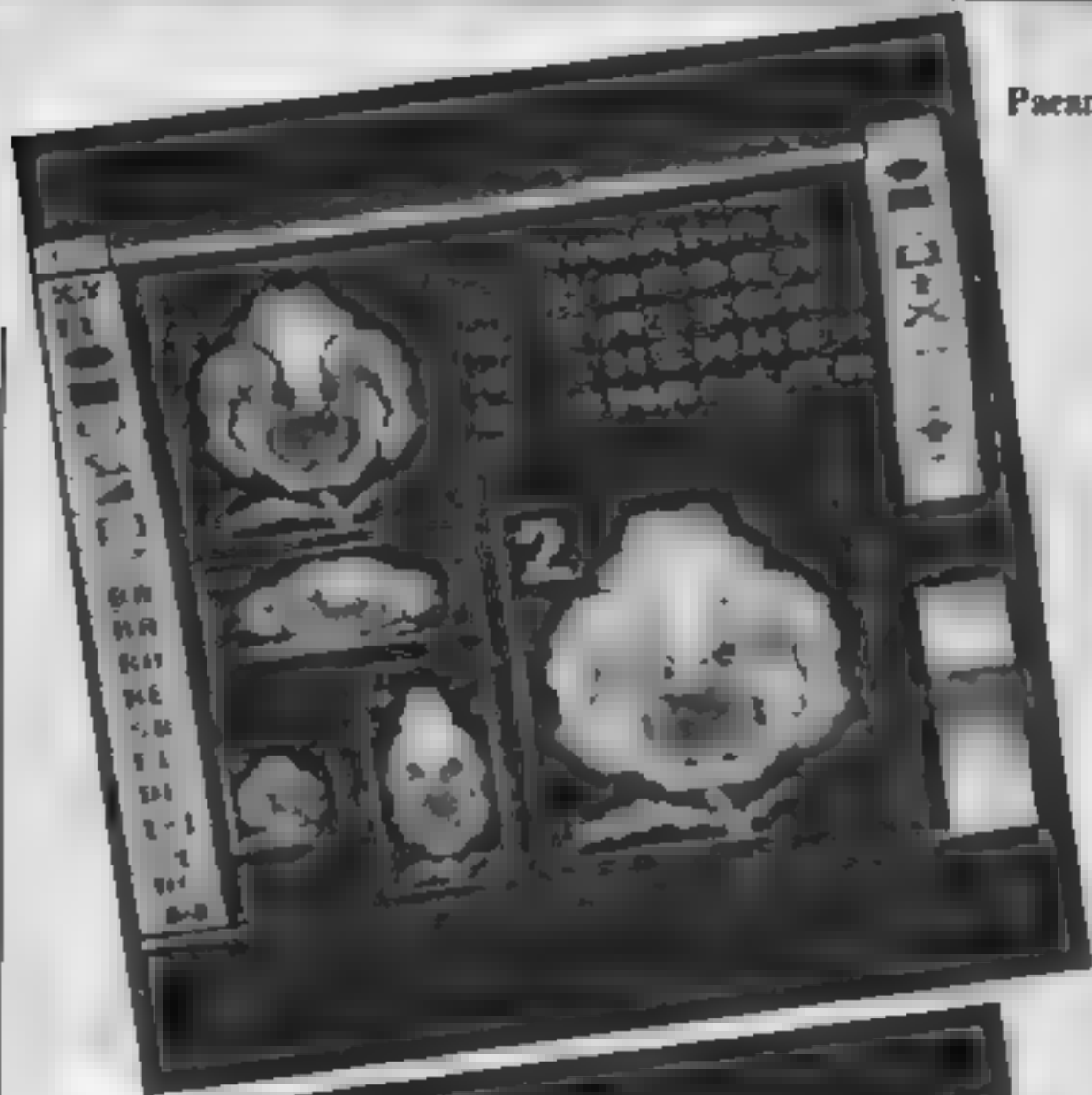
banding, flood fill (which allows you to fill in shades as well as pure colours), facilities to draw triangles, rectangles, circles and ellipses. Also, there are facilities rarely found on cheap drawing packages. These include block copying, enlarging a section of the screen, reflecting a section of the screen and rotating. Because this program is written in BASIC, these facilities are painfully slow but nevertheless, it's nice to have them. On top of all this, there are some very unusual facilities such as the "star burst", which allows you to fill an area of screen with random dots, and a facility to define characters on the screen without disturbing the main picture.

Lack of keyboard option and the fact that you can only draw in MODE 2 were irritating but overall, this drawing package is very good value for money and easy to use.

Airbrush — Peter Sharpe

Pictures produced on micros are characterised by their solid outlines. This particular package (available only on disc) is very different in that respect. It allows you to create drawing such as those produced with air brushes.

When the main program is entered, the cursor may be moved about the screen and a dollop of spray may be deposited at the cursor position by depressing a certain key. The size of this spray may be varied by changing the size of the cursor with ease. As you can see from the promotional pics, the possible effects are stunning. However, the actual spraying process is excruciatingly slow



Paean's Artist

and four different speeds have been provided. When drawing, there is the usual rubber-banding facility together with facilities to draw lines between two set points and a facility to draw a line as you move the cursor

Of course, there are facilities to draw circles, ellipses, rectangles, triangles and printing text. Also, there is a fill facility which allows you to create shades of colour very easily. You can mirror an area of the screen, repeat an image and there's also a very powerful facility for drawing 3-D images by means of perspective lines, perspective shading and hidden line removal. Although it's difficult to use, some stunning effects are possible

This is exceptional software accompanied by a very well written manual. I can't do full justice to it in such a short review but needless to say, for those seriously interested in computer graphics, the choice is obvious.

AMX Art — AMX

This is rather different from the others since it is written especially for the AMX mouse,

but I just had to include it in this article because it is superb!

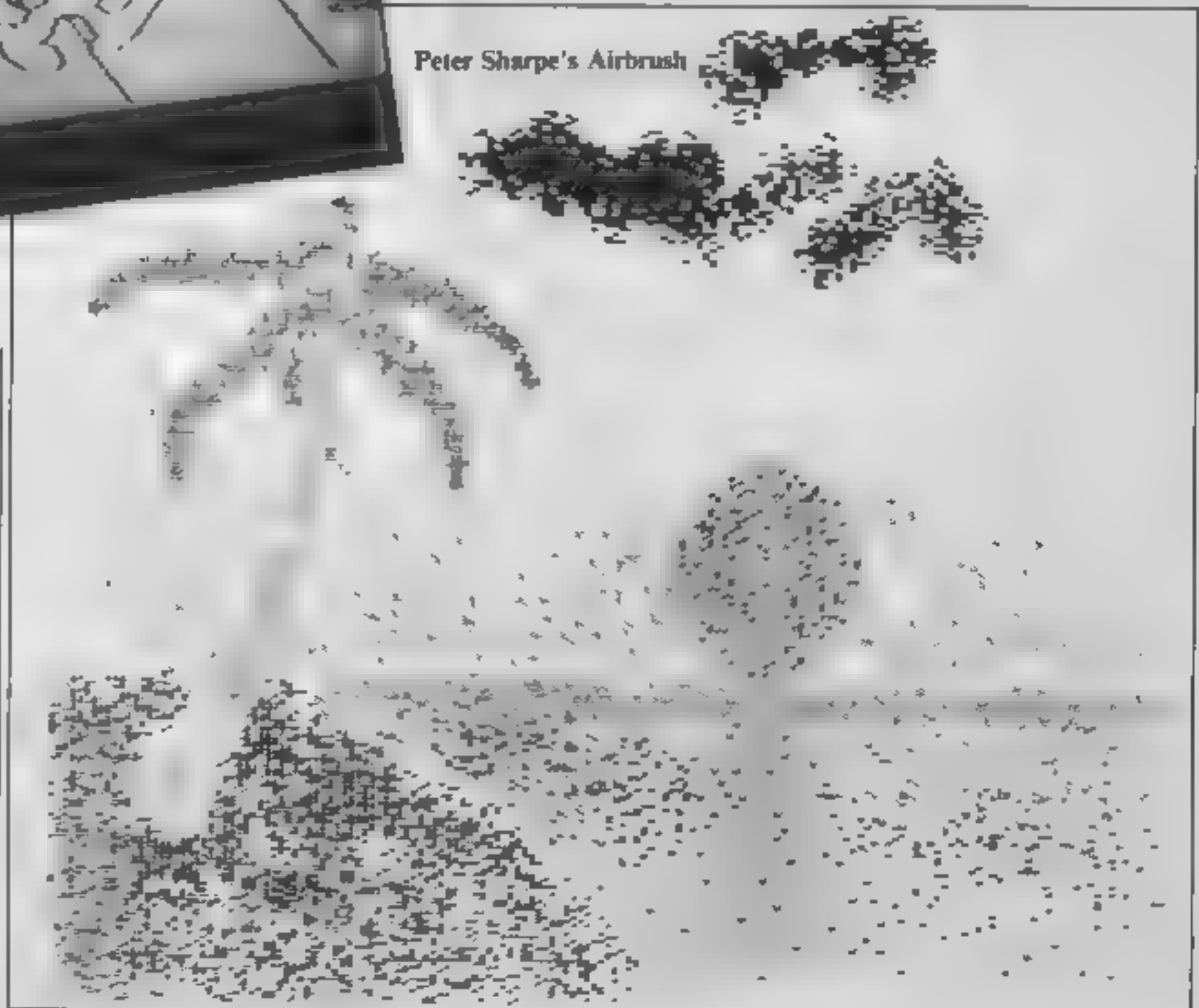
A mouse is a device which may be rolled about an even surface in order to control an icon. In this drawing package, the shape of the icon under your control specifies which mode you are in. For example, if you are currently in rubber-banding mode you control a little pencil. The main screen shows a drawing board surrounded by the various icons. At the top of the screen, there are four more options which are called up in the form of windows.

Drawing facilities include rubber-banding, spray, paint, erase and facilities to draw rectangles, circles, text etc. In fact, all the usual features plus a little bit more

However, it's not the number of features which makes this drawing package so fantastic, it's ease of use. It's just like drawing with pencils or brushes! Admittedly, this drawing package only allows you to draw in MODE 4 so you can't use any colours, but all in all, this is an excellent drawing package accompanied by a beautifully presented manual



Peter Sharpe's Airbrush



and there are no extra features to help you along. As it stands, a competent programmer could easily write a similar program in about half an hour and the package is definitely overpriced. Nevertheless, I did like the effects which are possible with this package

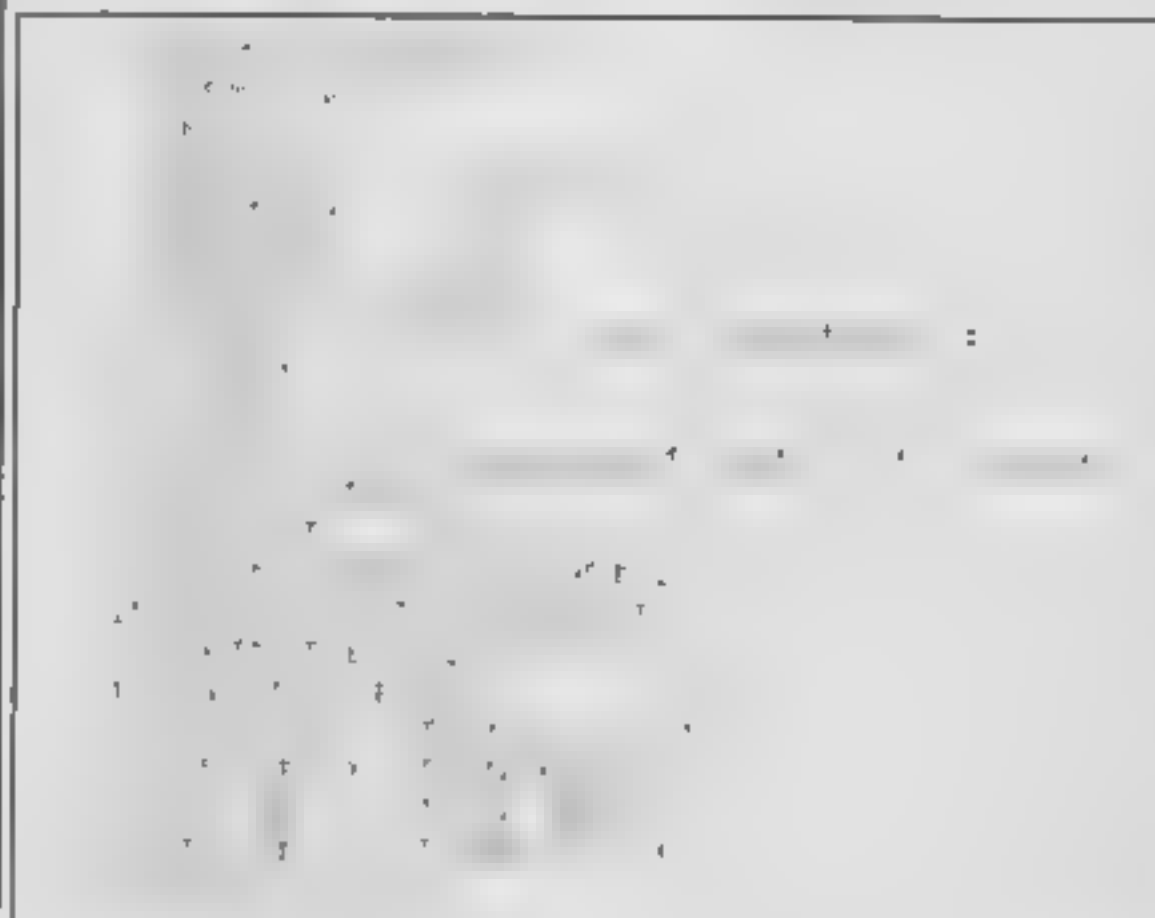
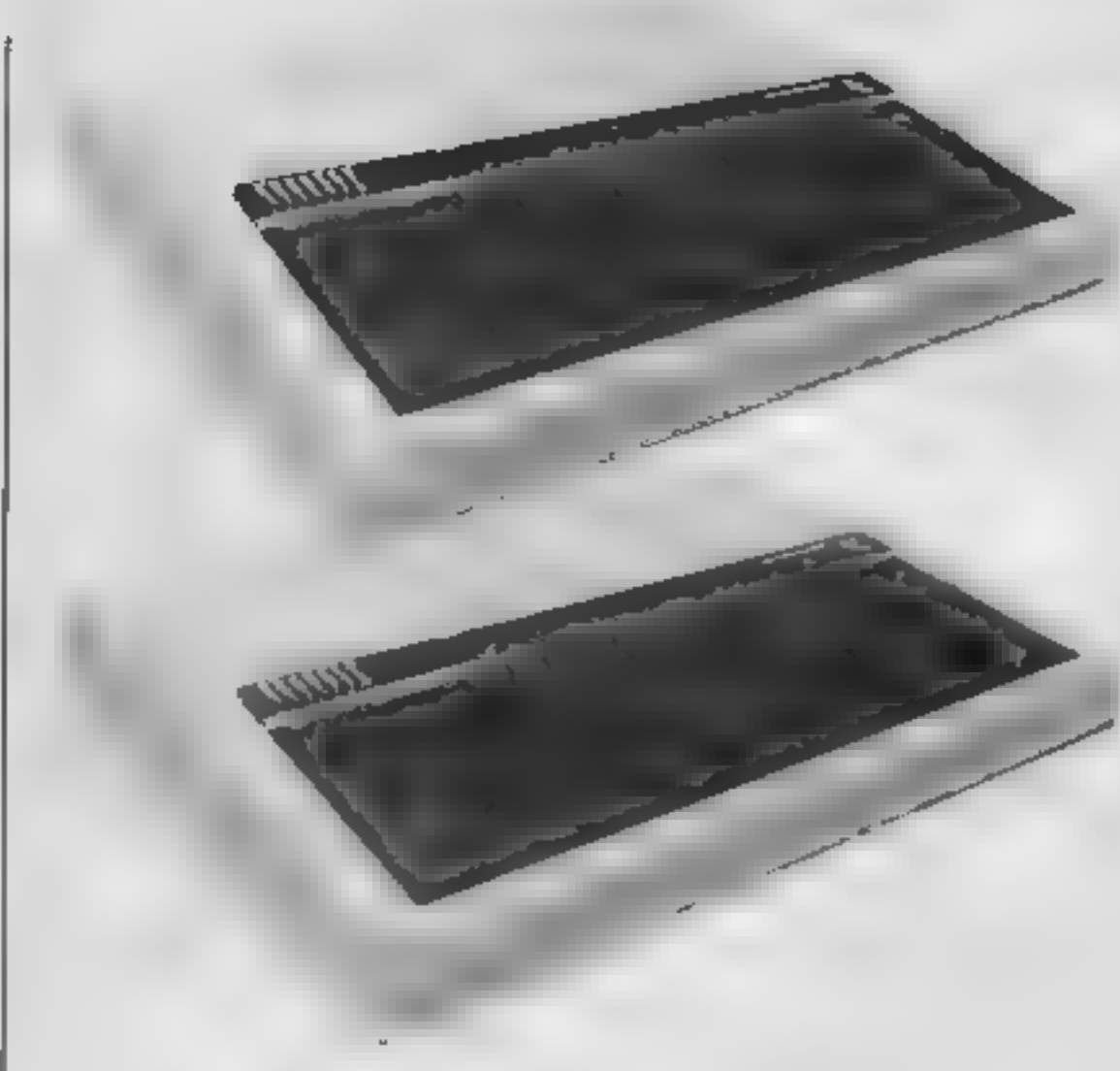
AB designs — AB Designs

It is obvious that a lot of thought went into the design of this software. For a start, MODE 0 and MODE 1 are used for drawing and low resolution MODE 2 has been left out. Also, joystick option has been left out in favour of the much more precise keyboard control.

The top two lines are used as a status window.

The cursor is moved about the screen via the cursor keys

ANIMATING YOUR CHARACTERS



Now that you can redefine characters Shingo Sugiura shows you how to make them move

Being able to redefine characters (including the alphabet) is all very well, but how about some animation! In this article, I will deal with simple character movements. Redefine character 224 as an alien (as shown in the first of this series) and we will attempt to move this alien about the screen.

The easiest way to provide animation is the PRINT statement to display the character, rub it out and then

redisplay it at another position. This provides the illusion of movement. To print a character at a specific position on the screen, there is a command TAB which stands for TABulation. If you have used typewriters, you can probably guess that it allows you to indent text. For example, select MODE1 by typing MODE1 <RETURN> and try.

```
PRINT TAB(13)CHR$224
```

You will see that the alien is printed on the column 13 characters from the left. The number in the bracket specifies the column at which you want to print your character (remember that the first column is zero not one). The number of columns in a screen depends on what MODE you are in. In MODEs 0 and 3, there are 80 columns. In MODEs 1,4,6,7 there are 40 and in MODEs 2 and 5, there are 20. Using TAB allows us to position a character on a line, but how can we print the character in the middle of the screen? You must specify at which column and row the character should be printed. To do this, we need a second parameter in TAB in the form TAB(X,Y). As before, the first number is the column, but the second number is the row. Type in:

```
PRINTTAB(10,10)CHR$224
```

The alien will appear roughly in the middle of the screen. If you know the cartesian co-ordinate system, you could think of the TAB parameters as the X and Y co-ordinates, except the origin is situated at top left hand corner as shown in fig 1.

Using TAB in this way allows us to print a character at any position on the screen so in order to move the alien from left to right on the tenth row, we can employ the method described earlier in a program.

```
10MODE1
20FOR X=0 TO 39
30PRINT TAB(X,10)CHR$224
50PRINT TAB(X,10)""
60NEXT
```

The alien is certainly moving, but it is far too fast and it sure flickers a lot! The flicker is due to the fact that the human eye cannot register the character fast enough. The solution is to put a small delay in line 40 in the form:

```
40FOR A=0 TO 100:NEXT
```

One problem is, the character is very small. In a 8 x 8, you can hardly display your true artistic talents can you? How about displaying bigger characters by printing several characters next to each other? We will attempt to do just that in the next article. In the mean time, type in listing 1 and see how it works.

JOYSTICKS

Take your pick: the Arcade or two versions of the Kempston joystick. HCW experts tell you what they think

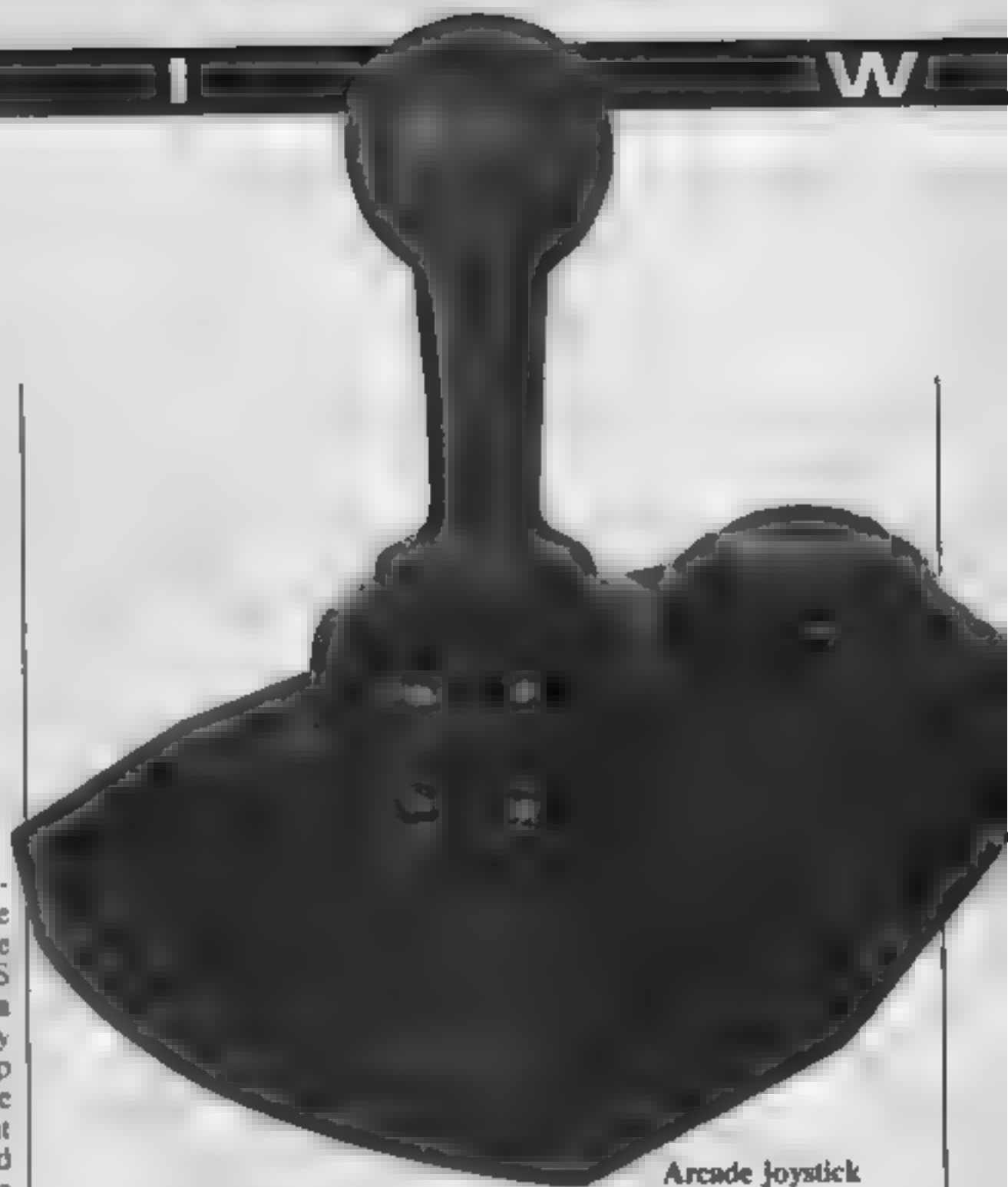
Arcade

Fitted with the standard nine-pin D connector and about one metre of lead, the body of the Arcade is finished in black ABS plastic, shaped roughly like a domestic iron. A single body mounted firebutton at the sharp end makes it equally suitable for right- or left-hand use, but the absence of a stick mounted button makes its use a two handed job

Surprisingly, in the face of the three very small rubber pads fitted underneath, the Arcade moves about very little as a result of its low centre of gravity, though the pads really should be larger. For hand held use, a small depression at the front almost fits the unused forefinger perfectly — not bad, but not quite right

The visible portion of the solid steel stick is covered in plastic, and surmounted by a ball small enough to be gripped with thumb and forefinger, but large enough to occupy the palm of the hand. The shank disappears into a boss on the body, which, when removed, reveals a very high standard of construction. The boss itself contains a substantial rubber suspension unit, bonded to the shaft, and to the body, and it is this which gives both smooth movement and a positive return action without being tiring

Beneath this, attached to the shaft, is a circular actuating disc which transmits movement to four Swiss-made precision micro switches, mounted on a high quality circuit board. These are replaceable in the event of damage, though this seems unlikely, and give a very positive click when contact is made. The firebutton is similarly equipped. Finally, at the base of the shaft, an extension of the actuating disc locates in a depression moulded into the base in the base of the shape of an eight-pointed star, thus giving clear directional feel. The



Arcade joystick

cables are brought into the body, then terminated in a proper plug which fits into a mounted socket

In use, the Arcade is equally impressive, though, as with any new joystick, it takes a little time to get used to it. Control is swift, clean and decisive, with a minimum of movement, and the distinctive click clearly signals contact. Firebutton action is immediate, though a button on the stick itself would have been welcome

Joysticks are often either tough or sensitive. This one is both. Well worth checking out, but pricey. **D.M.**

Price: £15.95

Manufacturer: Suzo

Distributor: Euromax Electron-

Address: Pinfold La, Bridlington, N Humberside YO16 5XR

Machine: Standard nine-pin D plug joystick port



Kempston Joysticks

As Kempston has always been at the forefront of the joystick field, I was eager to test out the latest two additions to its joystick range, which work with the Atari, C64, Spectrum and nine-pin connections

The Formula 1 joystick is now the flagship of the Kempston range. To say the stick is distinctive is an understatement. When I first opened the box I was nearly ill. It is modelled in pale blue plastic with huge white fire buttons

Having regained some composure I examined the Formula 1; as far as I could see it was identical to the older Competition Pro joystick. The difference became apparent as soon as I waggled the stick. It made lots of tinkly clicking noises, produced by the new micro switches which Kempston has used in place of the previous leaf switches.

Being as sceptical as ever, I passed off the use of these micro switches as a gimmick, and a noisy one too. It wasn't until I began to play games with the new stick that I appreciated the quite substantial difference the switches made

I found that it was no longer necessary to keep the stick rammed over to one side to ensure that the spacecraft continued to move in that direction. The audible click and the faint feel of the switch depressing, made the Formula 1 a touch player's dream.

Kempston Formulas 1 and 2

The Formula 2 is also decked out in the colours of the Kempston micro racing team; however, this is the only similarity to the Formula 1. The handle is a long, rather slim, pistol-grip design with a fire button on the top. Two more fire buttons are provide on the base but these are a little too close to the centre to be reached easily

The base is fitted with suckers and I would recommend that they be used because as a hand-held joystick it is a disaster. Should you hold the base in your left hand and attempt to move the stick to the left then you will have difficulties. The stick will strike your hand before reaching the limit of its travel.

I have never used such a sloppy stick; it can be moved from left to right through a distance of about 7 cm without the program registering any movement.

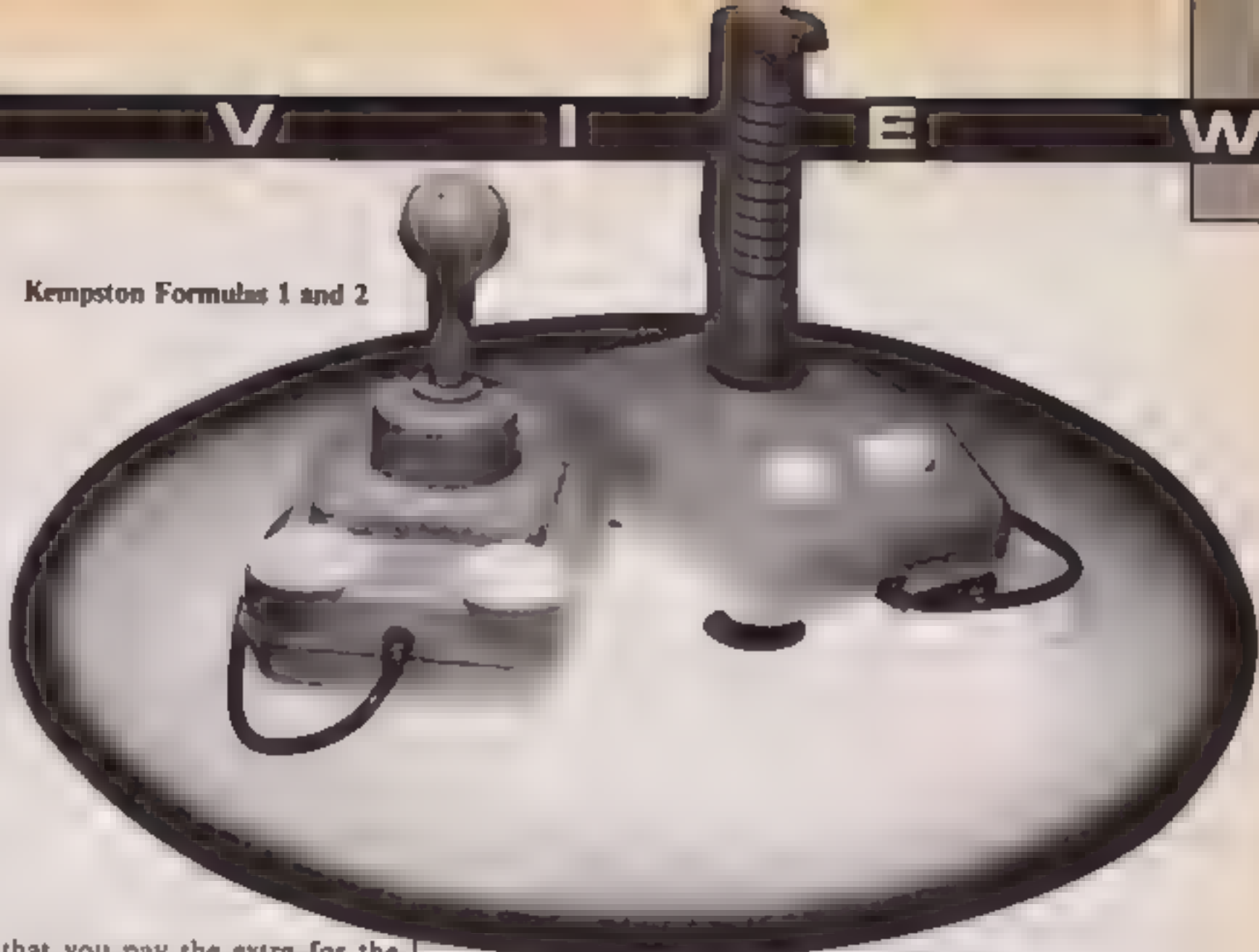
I would definitely recommend

that you pay the extra for the Formula 1 joystick: a dream machine. **J.R.**

Price: Formula 1 £16.95
Formula 2 £11.95

Manufacturer: Kempston

Address: Singer Way, Woburn Rd, Ind Est, Kempston MK42 7AF



Formula 1





Formula 2




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PLAY GAMES, THEN YOU CAN'T
AFFORD TO MISS.**

Computer

GAMER

This fantastic new magazine appears on March 22 1985 and on the fourth Friday of every month after at the price of 98p.

Each issue will be produced in cooperation with Eecaan our Interplanetary Adviser who on his home planet, Aargon, is a member of the Association of Supreme Players. He will be monitoring developments in the games industry and advising Computer Gamer readers with all their gaming problems. Included in each issue will be pages of review of the latest games releases, special Adventure features and a help-line, invaluable articles on how to 'crack' specific games a high-score page, exciting programs to type in for most of the popular home computers, news, competitions, reviews of peripherals and computers themselves if relevant to the games field and LOTS more.



Also, all readers of Computer Gamer will have the opportunity to join our tremendous Reader's Club — each member will receive a membership card and a regular newsletter which will contain up-to-the-minute news and all sorts of offers on a variety of products.

So all-in-all there's no way you can afford to be left out of the great new revolution 'in' games computing — rush out and buy your copy NOW!

Wild Inlay cards

Since the computer games market is now at a peak it is interesting to see the wide — and wild — variety of illustrations on cassette inlay cards and on the packaging.

I remember some time ago several letters appeared in HCW criticising these illustrations and saying that they give a false impression of the quality of the game inside — in some cases true.

Recently Firebird unleashed its range. The inlay cards feature the thing we've all been clamouring for screen shots. Unfortunately, for me anyway, they have precisely the opposite of the desired effect. OK, they show you what you're getting, but in a collection they look pretty unimpressive.

With C64 games costing anything up to a tenner it's nice to have something great to play and something great to look at. US Gold seems to have found the answer by mixing an illustration with an inset of a screen from the game — on most of its software anyway.

Some naff ideas have arisen — New Generation uses photographs which are very unappealing. Also some illustrations are definitely not masterpieces — can you hear me, *Interceptor*?

What I'm really getting at is the fact that it would be a good idea to have posters included in the game price. Most software is dear enough anyway. Not only do the software houses get a little free advertising, but we get a better way to cover the holes in the wallpaper.

Andy Clarke, Baddesley Ensar

Loading problems — solved

I purchased an Amstrad CPC464 about two months ago. I am very pleased with its performance, the range of software is increasing all the time, and generally I am very satisfied with it.

However I feel I must complain about the Virgin's *Sorcery*. I originally purchased a copy three weeks ago. This loaded on one side of the tape, but not the other. I returned the tape to the supplier, who changed it. This too proved faulty, failing to load on either side. I again changed the tape, to no avail. I then tried a different supplier, but still I had no joy.

I have just tried the replacement batch of tapes from my original supplier. These too have proved faulty. The fault can't be my machine as all other software loads OK (my original tape wouldn't load on the supplier's demo machine at all).

So come on Virgin, why do you insist on using an unreliable loading system which only works on certain machines, while marketing

such an excellent game

Mark Bayley, Atherstone

A spokeswoman for Virgin said: "The problem is the same as some users have been experiencing on the Commodore 64. When a tape features a fast-load system, if the user's tape recorder heads are even slightly out of line, the machine can't cope with the speed of load."

"To remedy this we've now released a new version of Sorcery, which has fast-load on one side, and a slow-load on the other. The problem's not enormous — we've only had about 30 tapes returned out of several thousand."

"Mark Bayley should send his game directly back to us and we'll replace it. Whenever a user buys software and has problems loading it, and the shopkeeper has to replace it several times, the user should then send the game to us, since the shopkeeper may not know how to solve loading problems."

Virgin, 2-4 Vernon Yd, Portobello Rd, London W11 2DX

Wanted — pen pal

I am a 12-year-old owner of a TI 99 4A which I have had for six months. I am writing to you about software for my computer. I find it very hard to obtain software. I can get some by mail order but it

isn't easy.

I would like to get in touch with someone who has a TI so that we can swap games.

Neil Lovell, 22 Bampton, Tamar Rd, Worle, Weston-super-Mare

Not enough space

Overall I am pleased with the new look HCW although I thought the old front cover was better. I'm glad to see you have returned to the better glossy paper and are introducing more colour pages. The software reviews have improved and I like the way the packaging is displayed although a screen shot of some of the better games would be a valued feature.

I have found your hardware and software reviewing more informative. I also

found the utility special for the C64 was useful for my own programming on that machine.

However, one irritation I regret to add is the relatively short programs you are asking to be sent in. One hundred lines is hardly enough to supply a decent program and also limits the variety of programs. I myself have nearly finished two programs, both of which I would like to send in for reviewing and maybe publishing, but which require more lines for the graphics. To

cut down on the graphics would ruin the game and interest.

I know space is a problem in magazines like HCW but more room would make the programmers' lot considerably easier.

Jonathan Hagen, Altrincham

We're on the horns of a dilemma: we want shorter programs, but to keep up the interest. So we're prepared to compromise. Send in your programs, but try wherever possible to keep them short.



*Now I know
what you mean
about the
pen nib.*

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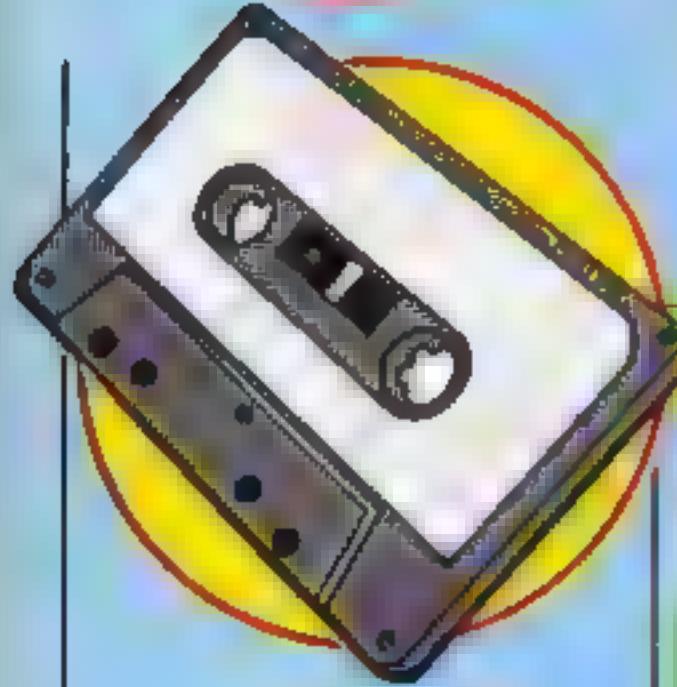
TOP 20

Compiled by

Gallup

SOFTWARE

Fortnight Ending April 2, 1985



New Chart

This week is the first time we will be running the new fortnightly Gallup chart. The powers that be — Gallup, GOSH, GOSD, Ace Publishing and the Computing Services Association — got together and decided that the chart should now be organised on a two-weekly basis.

The reason for this is that distribution ordering is done each fortnight. So that maximum credibility will be attained, the Gallup chart will now be issued to tie in with these distribution orders.

The Gallup chart is also being featured on BBC's Saturday Super Store — so watch out for it!

LAST WEEK	MOVEMENT	RANK	TITLE	PUBLISHER	SPECTRUM	EMUL84	ELECTRONIC	AMSTRAD	ALIAS	OTHERS
●		1	Soft Aid	Various	●	●				
RE		2	Spy Hunter	US Gold	●	●				
▲		3	World Series Baseball	Imagine	●	●				
▲		4	Ghostbusters	Activision	●	●			●	●
▼		5	Bruce Lee	US Gold	●	●				●
▲		6	Football Manager	Addictive Games	●	●	●	●		●
▼		7	Impossible Mission	CBS	●	●				
▲		8	Raid over Moscow	US Gold	●	●				
▼		9	Combat Lynx	Durell	●	●	●	●	●	
▲		10	Everyone's a Wally	Mikro-Gen	●	●				
▼		11	Air Wolf	Elite	●	●				
▼		12	Pole Position	Atari	●	●	●	●	●	●
▲		13	Moon Cresta	Incentive	●	●				
▲		14	Finders Keepers	Mastertronic	●	●				
▲		15	Blockbusters	Mecan	●	●	●	●		
▲		16	Castle Quest	Micro Power	●	●	●			
▲		17	Jet Set Willy	Software Projects	●	●			●	●
▼		18	Alien 8	Ultimate	●	●				
▲		19	Booty	Firebird	●	●				
▲		20	Mini Office	Database	●	●	●	●	●	●

SPECTRUM

BBC

COMMODORE



Top Ten

- Soft Aid (Various)
- Spy Hunter (US Gold)
- World Series Baseball (Imagine)
- Bruce Lee (US Gold)
- Everyone's a Wally (Mikro-Gen)
- Finders Keepers (Mastertronic)
- Moon Cresta (Incentive)
- Raid over Moscow (US Gold)
- Alien 8 (Ultimate)
- Formula One Simulator (Mastertronic)

Top Ten

- Castle Quest (Micro Power)
- Elite (Atari)
- Combat Lynx (Durell)
- Blockbusters (Mecan)
- Emerald Isle (Lynx 3)
- Kresin Cousins (English)
- Eddie Kidd Jump Challenge (Martech)
- Mini Office (Database)
- Football Manager (Addictive Games)
- Brain Jacks Superstar Challenge (Martech)

Top Ten

- Impossible Mission (CBS)
- World Series Baseball (Imagine)
- Pole Position (US Gold)
- Ghostbusters (Activision)
- Air Wolf (Elite)
- 1985 The Day After (Mastertronic)
- Football Manager (Addictive Games)
- Raid over Moscow (US Gold)

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Personality pic: R Newton is a 31-year-old family man from Thetford. He uses his BBC, which he's had for 16 months, to play text-only adventures. He worked up to the BBC from a homebuilt Z80 5100 based system, via a ZX81 and Dragon 32.

Readers' hi-score table

Name	Game	Machine	Score
Robert Lomax	Hunchback	C64	3,064,200
James Hogan	Chucky Egg	BBC	254,450
Edwin Armstrong	Pole Position	TI	109,250
Paul Crawley	Beamrider	C64	324,800
G Newton	Castle Quest	BBC	2010

Solution

As the switch of 5 and 9 suggests, simply change the places of numbers symmetricaly opposite through the centre, i.e. 15 and 3; 14 and 2; 8 and 12.

16	3	2	13
5	10	11	8
12	7	6	9
1	14	15	4

Hollers for help!

Major T J Magee, BFPO 36, wishes to have details of a UK supplier of software and hardware for the Aquarius computer which he bought recently.

VIC-20 owners who can help David Colletta of Bedford, please contact us. He wants a listing of a Bar Shooting and a Grand Prix racing game for his machine. If you have one ready for publication perhaps you could send it in.

R W Jeffs from London is looking for a routine which will allow him to have two independent and non-corruptable screens in memory at any one time. The routine must be able to switch between them when full of text or pictures.

Finally, an answer from our adventure fanatic to the question about Return to Pirate's Isle printed in HCW 100. An exploration of the Pirate's Isle is not part of this adventure at all, but part of Adventure 2.

If you have any questions or answers please send them to Readers' Page, Home Computing Weekly, No.1 Golden Sq, London W1R 3AB. We will print them as soon as possible and we will try to pass on answers to the writer of the question. We won't print your full address unless you ask us to do so.

Readers' jokes

What do the people at Taskset have for tea?
Scones with Jammin

Elliot Mason, Hove

What do you get if you cross a lavatory with a bird?
Potty Pigeon

T Simcox, Derby

Middle-aged lady: Young man, I wish to purchase a Sinclair Spectrum.

Assistant: 48K?

Middle-aged lady (icily): I'm 39 years of age and my name's Alice.

Eric Waters, Solihull

Martin Stevens of Newton Aycliffe has sent an addition to the machine code motion listing for the Spectrum (HCW 99). You use this by loading the motion program, running it and then typing this program.

```

10 POKE 65302,0:POKE 65303,
91
20 POKE 65308,0:POKE 65309,
25 LET N=12
30 LET A=0 : LET B=2*PI/N
40 FOR I=1 TO N
50 PLOT 128,88
60 LET X=40* COS A: LET
Y=40* SIN A
70 DRAW X,Y,-PI: DRAW X,
Y,PI
80 LET A=A+B
90 RANDOMISE USR 65300:
CLS
100 NEXT A
110 RANDOMISE USR 65375
120 GOTO 100
    
```



Talk back

Liz Tomlinson of Havant responds to our first soapbox (HCW 102):

I read with interest Soapbox in the new style magazine. A lower number of published programs is bound to improve the standard of the rest, and that must be to the benefit of the buying public. There has been such a plethora of games in the past few years that a great deal of care (and study of your reviews) has been necessary to ensure good value for money.

Fewer items means more time spent on each one, and greater care to ensure a high quality, high selling piece of software. This is already in evidence, particularly among adventure games, where a few top quality software firms have a very high percentage of the available market. Certainly my C64 is very well supplied.

Long may this trend continue.

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